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THE GERMAN-SWISS IN FRANKLIN COUNTY, TENNESSEE

A Study of the Significance of Cultural Considerations in Farming Enterprises

By
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Description of "Cultural Island" and Control Groups

The Problem and Its Setting

One of the most emphatic confirmations of the generally known fact that the South is our major agricultural problem area was the reference by President Roosevelt to the South as "the Nation's No. 1 economic problem." Shortly after this reference, the National Emergency Council issued, at the President's request, its Report on Economic Conditions of the South. To students of the South, the report reveals little that is new or surprising. It may assume significance in the annals of history, however, as a culminating national expression of a problem that has received increased attention from a host of writers and research workers. 1/

Although the agricultural problems of the South are admittedly complex, it seems that the center of the problem consists in the low income per farm, per capita, or per worker. Numerous studies reflect this economic condition. 2/ Figures on the Southern wage and income differential vary somewhat because of different methods of computation, but they are in agreement in that they show a below-national average income for the South.

The Report on Economic Conditions of the South epitomizing the economic problems of the South makes numerous references to its agricultural problems. The problems with which the here reported study concerns itself may be summarized most briefly by a series of short quotations from that report:

> With more than half the country's farmers, the South has less than a fifth of the farm implements. [P. 8.]
>
> The paradox of the South is that while it is blessed by Nature with immense wealth, its people as a whole are the poorest in the country. [P. 8.]

1/ See *Human Geography of the South; Human Factors in Cotton Production; Regional Reconstruction; A Way Out for the South,* by Rupert B. Vance; "The Cotton Belt", also by Vance, in *Migration and Economic Opportunity,* edited by Carter Goodrich, Howard W. Odum, *Southern Regions of the United States;* Gerald W. Johnson, *The Wasted Land;* Charles S. Johnson, Edwin R. Embree, and W. W. Alexander, *The Collapse of Cotton Tenancy;* Clarence Heer, *Income and Wages in the South;* P. G. Beck and M. C. Forster, *Six Rural Problem Areas,* Research Monograph I of the Federal Emergency Relief Administration (Washington, 1935); and also National Emergency Council, *Report on Economic Conditions of the South.*

2/ See, for instance, Clarence Heer, *Income and Wages in the South,* Maurice Leven, Harold G. Moulton, and Clark Warburton, *America's Capacity to Consume;* National Emergency Council, *Report on Economic Conditions of the South.*

Sixty-one per cent of all the Nation's land badly damaged by erosion is in the Southern States [with less than a third of the Nation's area P. 9.]

Half of the South's farmers are tenants . . . [P. 10.]

Southeastern farms are the smallest in the Nation. The operating units average only 71 acres, and nearly one-fourth of them are smaller than 20 acres. [P. 10.]

The South, with only one-fifth of the Nation's income, pays three-fifths of the Nation's fertilizer bill. [P. 11.]

. . . southern farmers cannot pile on fertilizer fast enough to put back the essential minerals which are washing out of their land. [P. 11.]

. . . it [the South] has the most thickly populated rural area in the United States. [P. 17.]

. . . because of the decrease in tillable land, in the older Southern States east of Texas, the farm acreage was actually less in 1930 than in 1860, though the rural population had nearly doubled. [P. 19.]

The richest State in the South ranks lower in per capita income than the poorest State outside the region. [P. 21.]

Even in "prosperous" 1929 southern farm people received an average gross income of only $186 a year as compared with $528 for farmers elsewhere. [P. 21.]

A recent study of southern cotton plantations indicated that the average tenant family received an income of only $73 per person for a year's work. Earnings of share croppers ranged from $38 to $87 per person . . . [P. 22.]

Nearly a fifth of all southern farm homes have no toilets at all. [P. 34.]

Houses in the rural South are the oldest, have the lowest value, and have the greatest need of repairs of any farm houses in the United States. [P. 35.]

More than half the farm houses are unpainted. [P. 35.]

Over 30 per cent of the persons employed on emergency works programs are farmers and farm laborers, as compared to 15.3 per cent for the country as a whole. [P p. 39-40.]

> The South leads the Nation in the employment of children in both farm and industrial work. [P. 41.]
>
> The farming South depends on cotton and tobacco for two-thirds of its cash income [P. 45.]
>
> Tenant families form the most unstable part of our population. More than a third of them move every year . . . [P. 47.]
>
> Southern farmers grow at home less than one-fifth of the things they use; four-fifths of all they eat and wear is purchased. [P. 47.]
>
> Many common vegetables are rarities in many southern farming communities, although both soil and climate are extremely favorable to their growth. [P. 48.]
>
> Savings deposits [for the South] were less than 6 per cent of the national total. [P. 49.]

The foregoing statements provide certain statistical measurements of the South's agricultural problems, but they do not explain how these difficulties and maladjustments came about. A careful examination of the history of the South reveals that practically all of its present major problems existed before the Civil War, many in serious form. The striking exception is tenancy. Slaves, with but few exceptions, became tenants and sharecroppers. This increase in the extent of tenancy in turn intensified some other problems.

Records of the ante bellum South show that it has been a debtor region from colonial times; that it has been a staple-crop region almost from the beginning; that land depletion and erosion badgered the South from the very start and that only through the clearing of new and "recovered" land has continuous agriculture been possible; that slavery was in a sense "profitable only by sustaining the Negroes on a mere subsistence level"; [3] and that a wage differential existed then as now. [4]

Many diagnoses have been made of the agricultural problems of the South. The more common explanations may refer to one, several, or all of the following considerations: the tariff, slavery, inefficiency of Negro workers, inefficiency of Southern farmers, lack of rotation and diversification of crops, the practice of buying many food products that could be produced on the farm, the Civil War and its aftermath, the climate together with malaria, hookworm, and inadequate diet, illiteracy and lack of education, discriminatory freight rates, the debtor status of the South, relatively poor soils and their mismanagement, lack of industrialization, overproduction of staples, and the

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3/ Gray, Lewis Cecil, *History of Agriculture in the Southern United States to 1860*, p. 474.

4/ Heer, Clarence, op. cit., pp. 24-25.

relatively small number of farmer immigrants into the South since colonial times (the white population of the South is predominantly of Anglo-Saxon origin and represents largely early colonial stock).

The study reported here did not presume to disassociate any one of these considerations from the agricultural problems. Most, if not all, of these factors have presented serious problems of various kinds; collectively, they provide a rather convincing explanation of the present situation. But this study did reveal that many of these difficulties have been exaggerated.

Many writers on the agricultural problems of the South feel that the region has vastly greater agricultural possibilities than have been realized.[5/] These writers are generally inclined to "blame the environment less and the farmers more" for much of the present difficulty. This is saying, in effect, that cultural considerations[6/] which are partly reflected by techniques or patterns of farming are largely responsible for the problems as they exist. Recognition of this belief lends interest to an examination of cultural groups that have immigrated into the South who have been known for their former thrift and enterprise. Patterns of living, it may be assumed, would not be altered completely by the change in location, and the enterprise of these groups in their new home as well as their success or lack of success would be suggestive, at least, of what can be accomplished with given techniques. Among those who came in large numbers and formed groups, patterns of living may have endured longer than among those who came in small numbers or as isolated individuals. A variety of such immigrant groups may be found in the South, representing different background and training. How have they fared? This study provides an answer in the case of one group, an answer which may be significant.

Although this report deals largely with a successful immigrant community in Franklin County, Tennessee, and although there are other outstanding cultural-agricultural "islands" in the South, it should not be assumed that all immigrant groups (either from the North or abroad) have been successful in the Cotton Belt. A great number of northern farmers have failed in the South. Reasons are many and varied but they relate chiefly to heavy initial investments in land and machinery and to unmodified northern methods of farming that they tried to introduce. Grasses and hays common to the Northern States generally fail in the South unless special methods of planting and care are used, particularly on nonlimestone soils. Moreover, these farmers frequently knew little about the use of commercial fertilizers. A few crop failures or near failures usually led to financial difficulties and the end of the farming experiment. In general, the European peasant type of farmer has apparently been more successful in the South for he generally avoided large financial obligations and had enough patience to adapt himself to a new agricultural environment.

5/ See, for instance, Rupert B. Vance, *Regional Reconstruction: A Way Out for the South*; Gerald W. Johnson, *The Wasted Land*; J. Russell Smith, "The Cotton Belt", in *North America*.

6/ Cultural considerations, as used in this report, refers to techniques, methods, and attitudes transmitted from generation to generation. This report focuses particular attention on patterns and attitudes reflected in farming practices.

In large part, this report represents an examination of the farming practices of a German-Swiss community in Franklin County, Tennessee, and of the farming practices of several groups of native, or traditional, farmers in the same county on physically comparable soil that, in the study, were used as "control groups". (For location of Franklin County, see fig. 1.) Even a casual examination of these communities reveals that the German-Swiss are comparatively the most industrious and successful farmers. The farming methods introduced by them clearly represented a pattern of farming that was learned abroad and in various Northern States. The significant consideration here is that, in the same physical environment, different cultural groups have developed what may be called different cultural landscapes.

The fact that geographers have largely ignored the cultural factor as a consideration in the determination of a cultural landscape does not nullify its significance. Although the field of geography has provided no outstanding studies stressing the significance of this agent in the determination of a cultural landscape, one of its foremost interpreters allows that man, as such, must be considered a geographical agent. In the preface to the *Geography of the Pennyroyal*, Carl O. Sauer writes as follows:

> "Climate, soil, and surface are materials out of which or by means of which the cultural forms of area have been made. What men do in a country is, however, determined in the end primarily by man. The physical equipment of the area sets limits within which there is a wider or narrower choice of activity, as the case may be. Physical resources, stock of people, and time are the elements out of which results the full geographic expression of the region."

The quotation suggests than man and his environment are an organic whole, and that within the framework of a given environment a type of homogeneity will develop in the activities of man which will be in harmony with his environment. The end product of this process of adjustment and blending is the region. That adjustments take place in an area may well be granted. The contribution made by the stock of people, however, deserves careful examination. Moreover, it is well to examine the time element in the fusion process for the efficacy of the melting pot is frequently overrated, particularly as to this element. American Indians, Negroes, Irishmen, Jews, Germans, Englishmen, Orientals, and others -- though Americanized generations ago -- frequently manifest patterns of living and conduct that are centuries old. 7/ These

7/ See, for instance, E. A. Ross, *The Old World in the New*; Konrad Bercovici, *On New Shores*; Joseph Schafer, *The Social History of American Agriculture*; Joseph Schafer, "The Yankee and the Teuton in Wisconsin", *Wisconsin Magazine of History*, Vol. VI, No. 2 (1922), pp. 3-23; Vol. VI, No. 3 (1923), pp. 261-279; Vol. VI, No. 4 (1923), pp. 3-19; and Vol. VII, No. 1 (1923), pp. 3-19; Carl O. Sauer, *The Geography of the Ozark Highland of Missouri*, pp. 164-174; Paul B. Sears, *Deserts on the March*, p. 58; Benjamin Rush, *An Account of the Manners of the German Inhabitants of Pennsylvania* (written in 1789). Although Dr. Rush's account was written nearly 150 years ago, some of his observations are relevant today.

There are numerous cultural-agricultural islands in the South, the importance of which has not yet been explored. Some notable islands of this kind not here

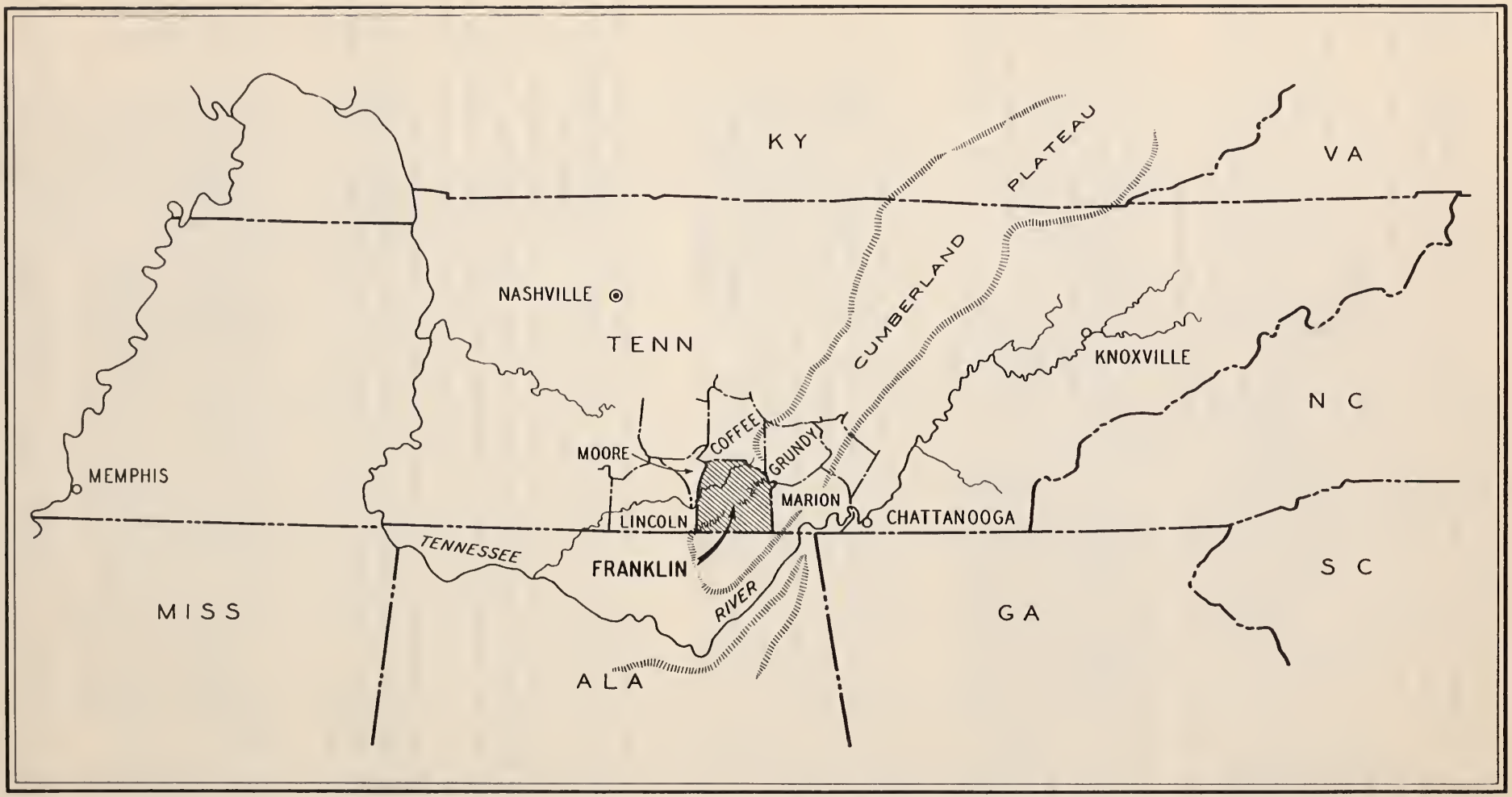

Figure 1. Franklin County is located about 50 miles west of Chattanooga on the southern boundary of the State of Tennessee.

patterns of living express themselves to varying degrees in the cultural landscape where these groups prevail. To ignore these facts is tantamount to a denial of some of the most basic facts of American history. This is particularly true of American agriculture.

This report represents an evaluation of intangible, imponderable qualities that express themselves in the way a cultural group attacks the problem of making a living, or of utilizing available resources. The German-Swiss, having in part a European background, were conditioned by a form of agriculture that dates back to Roman times and that, in order to survive, had to be constructive. For centuries their people have had to maintain soil fertility by activities that required painstaking care and effort. In part these German-Swiss also had a background which familiarized them with farm-machine techniques that were rapidly revolutionizing farming practices north of the Ohio River.

The traditional farmers in Franklin County, on the other hand, were conditioned by the predatory farming methods of the frontier. The accepted pattern of farming consisted of "mining" the soil with typical frontier crops, like corn, wheat and cotton. When soil fertility was depleted, new lands were sought, locally or in the West. It was the purpose of the study here reported to determine or evaluate the extent to which these patterns have played a part in the agricultural history of the German-Swiss and the traditional farmers in Franklin County.

Method of Study

Briefly, the methods employed in the study included field work in several chosen cultural islands and control groups, and the gathering of detailed statistical data from the original farm schedules of the censuses of 1860, 1930, and 1935.

About 2 months were spent in a quick survey of the South to gain an impression of the number of cultural-agricultural islands, as well as to note the degree of success of these immigrant groups in their farming activities. The survey covered the South from the Coastal Plain of North Carolina to the Black Belt of Texas, or the Old Cotton Belt, where the traditional agricultural problems are most intense. No thorough survey was made of Louisiana, Texas, and Arkansas, although numerous cultural islands are to be found in these States, particularly in Texas.

Although a number of communities in the South and particularly in the Cotton Belt have been selected for further study, this report for practical reasons, explores only one cultural island and three control groups in Franklin County, Tennessee. These data in combination with the rather general observations made on other cultural-agricultural islands in the South, suggest that the findings presented herewith have widespread significance for this part of the country. An interpretation of this significance, however, must be based on additional research.

Footnote 7 continued.

discussed are found in Lawrence, Grundy, Morgan, Lewis, Greene, and Cocke Counties, Tennessee; Lauderdale, Cullman, and Baldwin Counties, Alabama; Warren and New Hanover Counties, North Carolina. Many others were visited during survey trips in Louisiana, Texas, and Arkansas. Studies of some of these islands have been projected and, in several instances, have been partially completed.

Although rather complete figures were gathered from the original farm schedules of the 1930 and 1935 censuses, only the figures from the 1930 census are presented and discussed in detail. For comparisons between the island community and the several control groups, the more complete census of 1930 may be used to advantage. Few major changes have occurred between 1930 and 1935 among these groups, and where such changes have occurred they are introduced. The census of 1930 reflects the agricultural enterprise as unmodified by crop-control programs. This is a significant consideration in the present study of cultural factors. As is well known, the crop-control program in the Cotton Belt is bending all efforts in the direction of more cover crops and greater diversification of crops.

To place farming data for the German-Swiss in an understandable perspective, it is necessary to compare them with data that reflect farming activities for other groups, if possible for farm groups in as similar an environment as can be found (fig. 2). After considering the highly complex factors bearing on the selection of control areas, and discussing the problem with those most familiar with the agricultural situation in Franklin County, districts 4 and 9 were selected for comparison or control purposes. An additional control group consists of the non-German-Swiss white farmers in district 5. Most of the German-Swiss are in the latter district, centered largely around Belvidere, a very small trading center 7 miles southwest of Winchester. This report deals largely with four sets of figures, for the following four groups: the German-Swiss, who will be referred to as the island or the Belvidere community; control group 1 (non-German-Swiss white farmers in district 5); control group 2 (white farmers and operators in district 4); and control group 3 (white farmers and operators in district 9). Schedules for these groups were selected according to criteria presented on pages 49 to 52 of this report.

The map of Franklin County (fig. 3) on which the boundaries of the districts of the county are superimposed, shows that districts 4, 5, and 9 all lie partly in the Appalachian Plateau province. With the use of the best available maps, it was determined that district 4 has an approximate area of 64 square miles and that about one-third of its area is plateau land; district 5 has an approximate area of 37 square miles, of which also about one-third lies on the plateau; district 9 has an area of approximately 50 square miles and slightly less than one-fifth of this lies on the plateau. Several difficulties prevent a precise determination of the areas lying on the plateau. No good map shows the minor civil divisions of Franklin County and no given contour line separates the plateau from the lowland consistently.

The plateau sections of districts 4, 5, and 9 are almost completely forested, clearly shown by aerial photographs. There are a few small clearings in these plateau sections, usually having small cottages whose occupants usually grow a few garden products and a little corn. Interviews revealed that they obtain part of their limited income from nonfarming activities, such as cutting trees for ties or for other lumber products. Few, if any, are listed as farmers on agricultural schedules, since enumerators were instructed not to report as a *farm* "any tract of land of less than 3 acres,

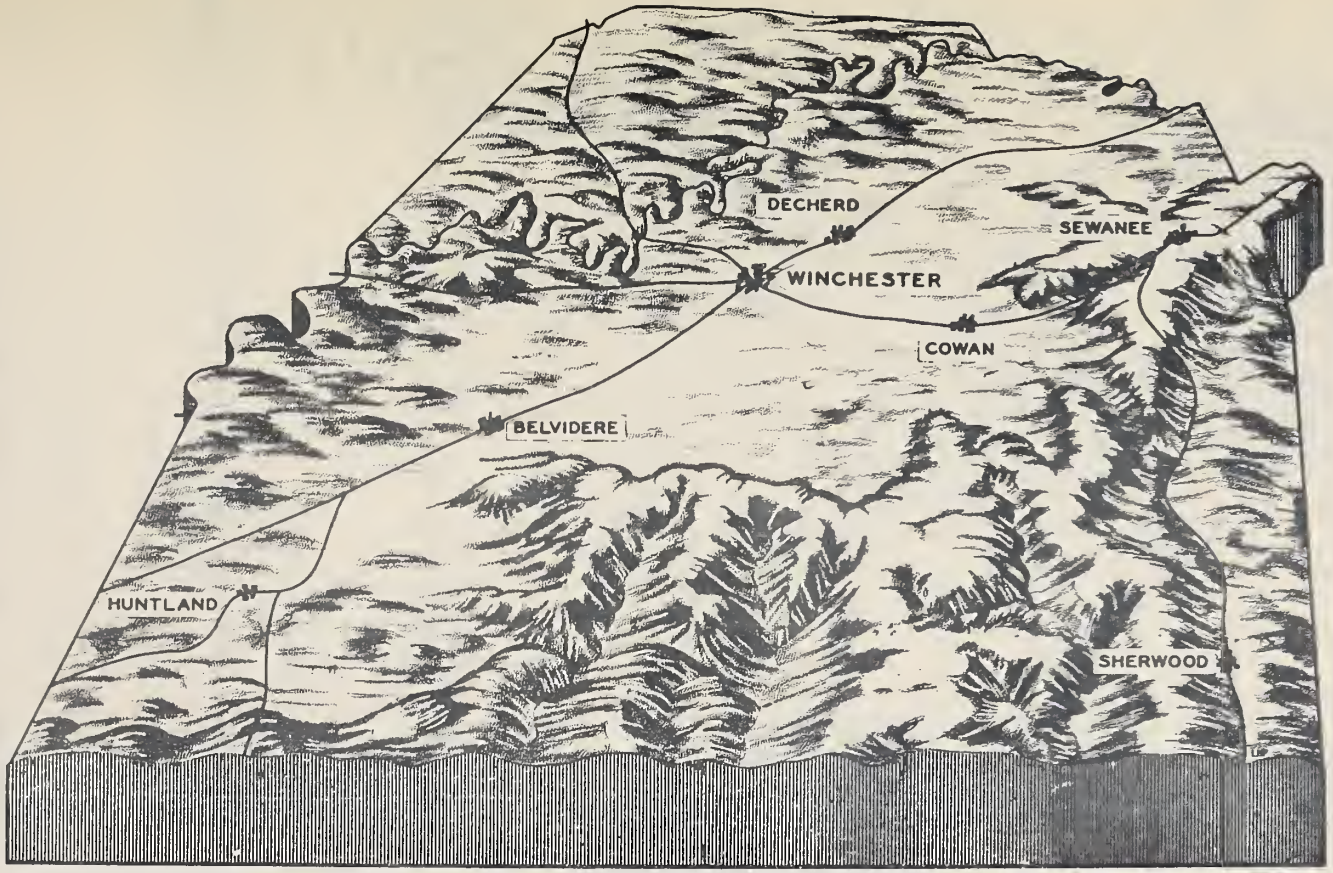

Figure 2. -- A physical map of Franklin County showing the rather maturely dissected Cumberland Plateau in the foreground, and a section of the Highland Rim lying to the north and west of the Plateau. Relief features are rather pronounced along the Elk River in the northwestern section of the county. Between the plateau and the Elk River lies the fertile limestone soil area of small relief.

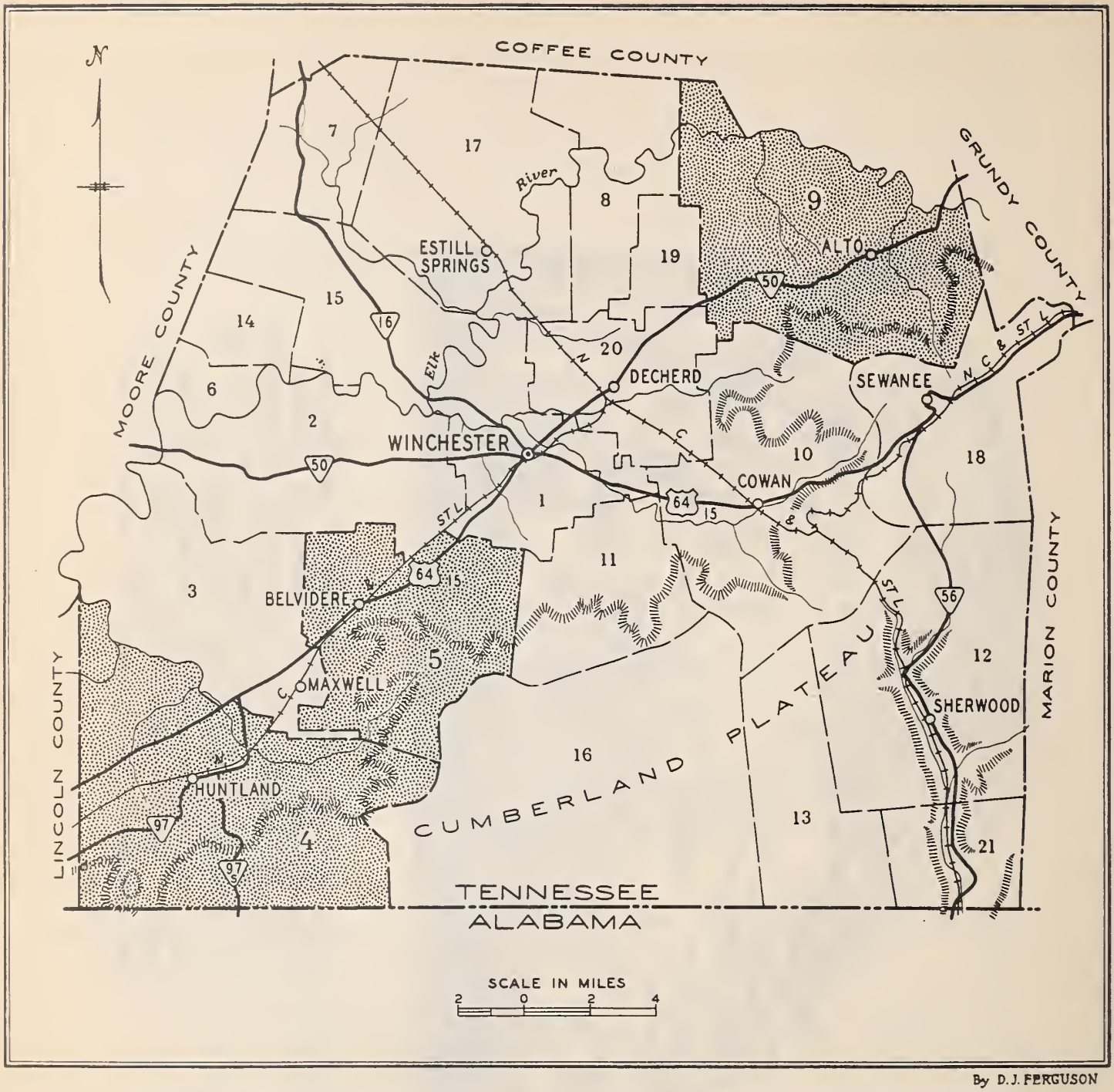

Figure 3. -- Minor civil divisions of Franklin County, Tennessee. This report deals largely with the shaded districts 4, 5, and 9. Note the outline of the Cumberland Plateau.

unless agricultural products to the value of $250 or more were produced on such tract in 1929."[8/] If some of these cottagers were reported as farmers, they probably worked for wages off the farm for a hundred days or more during 1929; if so, they were also debarred from this study because schedules reporting this fact were not included in the control groups (see table 7). It is almost certain that no cottagers on the Cumberland Plateau are included in this study.

Each of the districts selected has small acreages of barrens and swamps. The absence of a soil map of Franklin County precludes a careful delimitation of the latter types of land, which are largely wooded. According to the best available estimates, the barrens and swamp lands comprise from 6 to 8 percent of the area of district 4, from 3 to 4 percent of the area of district 5, and from 2 to 3 percent of the area of district 9. From the standpoint of good available farm land, district 9 is favorered because less than 10 percent of its area is plateau land, because it has less barren and swamp land than the other two districts, and because it has the exceedingly fertile alluvial lands adjacent to the Elk River. Barrens and swamp lands would be reported as woodland to the census enumerator. It follows that the ratio of woodland to tillable land in the various districts, as shown by the census sheets, provides a good working basis for comparison (see table 11).

District 4 contains a slightly greater percentage of barren and swamp land than the other districts, but this was more or less compensated for in 1929 by the lumbering activities there during that year, which increased the income figures (see table 38). The German-Swiss farms reach from the Cumberland Plateau into two of the largest swamps in the county. Between these two land types lies the fertile belt of red limestone soils on which are found nearly all their farming activities. Thus, the land types in the island are similar to those in the control areas.

The German-Swiss discussed in this report are composed of German and German-speaking Swiss (Swiss dialect) farmers who came directly or indirectly to Franklin County and settled in the Belvidere community shortly after the Civil War (mostly between 1868 and 1880).[9/] A few of the original immigrants remain, but many of the farmers are one and even two generations removed from the original immigrants. For the sake of convenience, all direct male descendants of these people are designated as German-Swiss. All of these people have been American citizens for a long time. Some intermarriage has taken place with the "natives", some of whom are excellent farmers. But as farming enterprises usually reflect the activities of the male member of the family, only the schedules of direct male descendants were included in the island.

The census of 1930 credits Franklin County with a total of 2,553 farms, of which only 160 were owned or operated by Negroes. So limited were the Negro schedules in districts 4, 5, and 9 that no valid averages could be derived from them, particularly not when they were broken up into tenure groups;[10/] therefore, their schedules were laid aside.

8/ *Instructions to Enumerators*, Bureau of the Census, 1930, p. 53, paragraph 298.

9/ It will be pointed out later that a limited number of colonial Germans came to Franklin County from North Carolina shortly after 1800. These people are *not* included in the island, and as they settled chiefly in district 6, few of them are in the control groups.

10/ According to the 1935 Census of Agriculture (photostated by minor civil divisions) there are 26 Negro farmers in district 4, 29 in district 5, and none in district 9.

In studies of this kind, many concepts dealt with are charged with emotional interest. Today stress is placed on the need of economic success and a certain lag or retardation in this respect is deprecated. In this study patterns of living are not to be viewed in terms of right or wrong but as adjustments to values maintained by a group. A group may be maladjusted in that it is not realizing the most from available opportunities, but it commits no wrong *per se* because of maladjustment. It should be clearly understood, therefore, that nothing that is said in this report is submitted as a criticism. Comparisons are made, but they are not meant to be invidious.

Franklin County in Ante Bellum Days

From Wilderness to County

In the middle of the seventeenth century the North American continent was still a measureless tract of land. English colonies being established on the coast found their provinces described in terms of latitude and extending from coast to coast. Eight friends of King Charles II in 1663 and 1665 were granted the lands lying between 29° and 36°30' north latitude and "running westwardly from sea to sea." [11/] This was to be Carolina, but subsequently it became North and South Carolina, and within the boundaries of the former lay the future Tennessee.

When the early settlers penetrated the secion of North Carolina lying beyond the Appalachian Mountains, they discovered that this long, rectangular State, reaching from the Atlantic Ocean to the Mississippi River, rested on a mountain fulcrum, flexed in both directions. A break was apparent from the very beginning. In 1796, Tennessee became the sixteenth State in the Union, not, however, without imprints which were rather significant in its development.

Before 1770, all of the present Tennessee area was still Cherokee Indian territory. The occupancy of these lands by white men followed the prevailing American pattern in that squatters and speculators entered the Indian territory, got into trouble with the Indians, and then set about to expel or destroy them.

Subsequent events have shown that Tennessee paid a heavy price for the confusion that marked its early history. The early penetration of the territory by squatters and one of the greediest hordes of land speculators known in American history, and the delay in the surrender of the western territory by North Carolina to the Federal Government precluded the setting aside of adequate tracts for public school purposes. Partly as a result of this omission, educational efforts in Tennessee have been seriously handicapped.

The fertility of the Central, or Nashville Basin, like that of the Bluegrass Region, was noted by the earliest travelers, and in these places the earliest settlements beyond the Appalachian Plateau were made. But the frontier was on the move, and by 1800 the first settler, in the person of Jesse Bean, settled in what was to become Franklin County only 7 years thereafter. [12/]

11/ Hamer, Philip M., *Tennessee--A History, 1673-1932*, Vol. I, p. 15.

12/ MacKellar, W. H., *Chualee--Chronicles of Franklin County, Tennessee*. This study was made available in manuscript form through the courtesy of the *Winchester Chronicle*. Numerous changes have been made in the manuscript on inserted, unnumbered pages, and for this reason specific page references have been omitted from this citation.

Vance, in his *Human Geography of the South*, repeatedly goes back to pioneer days in order to discover considerations or conditioning factors that have been responsible, at least in part, for the retarded South of today. 13/ Writing 80 years earlier, Frederick Law Olmsted noted that "the frontier conditions of the South are everywhere permanent." 14/ These observations by two of the most noted interpreters of the South should serve as an adequate excuse for a rather careful examination of the early history of Franklin County. Unfortunately, little reliable source material remains or ever existed on early agricultural practices here or elsewhere.

Types of Settlers and Landowners

Early settlers and landowners of Franklin County may be divided into four main classes. Among the first to establish themselves for varying periods were the early mobile frontiersmen, mostly squatters. They lived chiefly by hunting but raised some vegetables and corn on little clearings. They rarely remained fixed or developed into enterprising farmers. The second class of settlers consisted of persons who, for service in the Revolutionary War, had received warrants from North Carolina that entitled them to their new homesteads The third class consisted of small farmers who received land grants from the State of Tennessee, usually for 200 acres. By 1824, the State had made 508 such grants in Franklin County. The fourth group of landholders--few of them settlers or farmers -- consisted of the inevitable frontier land speculators The proper development of the State was blighted by these land sharks. Even before land was officially relinquished by the Indians, it was blanketed by large land grants But by 1812, most of these large holdings were in the process of being split up into small holdings and farms. 15/

Ethnic Groups

Early pioneers came to this county mostly from North Carolina, Virginia, and Georgia 16/ The predominant ethnic groups represented in the colonial population of Virginia and the Carolinas were the Scotch-Irish, the English, and the Germans, and it is from these groups that the pioneers of Franklin County were drawn.

About one-third of Franklin County lies in the Cumberland Plateau (see fig. 2), a section studied carefully by Campbell and described in *The Southern Highlander and His Homeland*. Campbell's map of the Southern Highlands includes Franklin County, but he bounds the area in part by the "western escarpment of the Allegheny-Cumberland Plateau " 17/ This excludes the Highland Rim section, with which this study is mainly concerned. However, it lies adjacent to and in sight of the plateau proper, and observations on the ethnic composition of the plateau population should also be pertinent to this adjacent section, Campbell examined rather carefully the ethnic composition of the Highland people and concluded that "the Scotch-Irish strain is strongest in some mountain sections; the English in others; and in some communities may be surmised an influence of German ancestry." 18/

13/ For instance, see chaps IV, XVI, XVII.

14/ *A Journey in the Back Country*, p. 414.

15/ MacKellar, op. cit

16/ *The Truth and Herald*, Winchester, Tennessee, March 21, 1935.

17/ Pp 11-13

18/ *The Southern Highlander and His Homeland*, p. 71. Campbell, to substantiate his findings, quotes Cecil J. Sharp, Director of the Stratford-on-Avon School of Folk Song and Dance and a recognized authority on these subjects, as follows: ". . . whatever may be the racial origin of the mountaineers, their predominant culture is overwhelmingly Anglo-Saxon, or, perhaps, to be more accurate, Anglo-Celtic."

It seems that Campbell's analysis holds equally well of the early settlers of Franklin County as a whole, since all of them lived in sight of the Cumberland Plateau. The Scotch-Irish and the English greatly predominate, but a small number of Germans came to the County. In part, these observations may be substantiated by an examination of the names of early settlers in the county. This last criterion must be used cautiously, but in combination with other evidence it lends weight to the statements already made.

A casual survey of Franklin County is not likely to unearth the fact that a few German families came to this section early in the last century. Accounts of the history of this county do not mention them. Moreover, no obtrusive methods of farming or living reveal this fact.

The presence of these people was first suggested by Faust's *The German Element in the United States*, which points out that the North Carolina Synod of the Lutheran Church received calls for ministers shortly after 1812 from Franklin, Lincoln, and Bedford Counties in Tennessee. Early census records also credit Franklin County with a Lutheran Church. 19/ Field work verified the fact that such a church did exist in the sixth district of Franklin County, and that shortly before the World War it became affiliated with the Presbyterian church. The members, originally few in number, came to the county early in the nineteenth century from the German settlements in the upper Piedmont of North Carolina. They settled on the lowlands adjacent to the Elk River and so had the benefit of superior soil in their farming. The fertility of these lowlands is replenished by the overflow of the river, and erosion is no problem.

Culturally and agriculturally these people have been largely absorbed by the dominant groups. Those who know them, however, agree that they still adhere rather closely to a live-at-home type of farming and are self-sufficient in their farming operations.

Farmer Types in Franklin County.

Historians rarely fail to remind their readers that the notion of a tripartite society in the South in ante bellum days is erroneous. They state that the great majority of Southern whites were slaveless yeomen farmers, 20/ who were poor and white, but not poor whites. Fully three-fourths of the Southern white population of about 8,000,000 in 1860 was without slaves and without any immediate interest in maintaining slavery. 21/ As many slaveholders held but a limited number of slaves, the leisure planter class was very restricted in numbers. 22/

19/ See, for instance, *Statistics of the United States in 1860; Compiled from the Original Returns and Being the Final Exhibit of the Eighth Census* pp. 466-469 (Washington, 1866)

20/ William B. Hesseltine, *A History of the South, 1607-1936*, pp. 321-322; William E. Dodd, *The Cotton Kingdom*, p. 10; R. S. Cotterill, *The Old South*, p. 265, Benjamin Burke Kendrick and Alex Mathews Arnett, *The South Looks at Its Past*, p. 117. Lewis Cecil Gray, op. cit., pp. 483-500. The last gives one of the most complete classifications of Southern social groups with descriptions. Many other sources could be added.

21/ Hesseltine, op. cit., pp. 321-322, and Cotterill, op. cit., p. 265.

22/ Large plantations were a great exception in the South in 1860. In a total population of 8,000,000 there were only 2,700 planters owning more than 100 slaves, fewer than 200,000 had between 10 and 100 slaves, 300,000 owned between one and 10, and almost 80,000 whites had but one. Hesseltine, op. cit., pp. 321-322.

The small or yeoman type of farmer has always predominated in Franklin County. He shared few of the attributes of the poor whites. This distinction is significant. Some inhabitants on the plateau and in the barrens of the county come close to meeting the description of the poor whites, but a distinction remains. 23/

Gray, in his *History of Agriculture in the Southern United States to 1860*, gives the most fitting description of the prevailing type of early farmers in Franklin County. He designates this group as commercial farmers and places it, according to a socio-economic scale, between the Southern Highlanders and the planter class. He observes that this group long retained much of its pioneer economy; that some of the prosperous owned a limited number of slaves; that general farming was the rule; that the farmers had comfortable frame houses and commodious barns; that they were largely self-sufficing in food production, were sturdy, independent, and intelligent but had little education, imbibed freely of distilled products, and were prone to shout at camp meetings. 24/ This is a good general description of the early farmers in Franklin County, except that few "commodious" barns have ever existed in the South, in Franklin County or elsewhere.

No large cotton plantations ever developed in Franklin County, nor did slavery play an important part in its farm program. The plantation economy was a cash economy and thrived only where transportation facilities made possible the marketing of crops. During pre-railroad days, this consideration alone prevented the development of large plantations away from rivers that were not navigable for at least part of the year. Until 1850, according to A. E. Parkins, the bulk of the South's export cotton was grown within ten miles of navigable streams. 25/ It is for this reason that the plantation system swung south and west from Virginia and the Carolinas and also clustered around navigable streams in Tennessee and Kentucky. Interior sections not favored by navigable streams were early used for diversified farming on a rather small scale. Just before the development of the Middle West, eastern Tennessee was one of the chief stock- and grain-producing sections of the country, and was frequently referred to as the "hog and hominy" section of the South. 26/

Transportation and the Agriculture of Franklin County

Agricultural activity in the county was conditioned early by geography and the prevailing economy. With the rest of east Tennessee, Franklin County lies above the now famous Muscle Shoals, a serious obstacle to early river transportation. A short distance below this major obstacle, Big Bend Shoals and Colbert Shoals provided further hazards to the river pilot. Some distance upstream are the Elk River Shoals. Waiting for an adequate rise in the

23/ See Paul H. Buck, "The Poor Whites of the Ante-Bellum South," *American Historical Review*, Vol. XXXI, pp. 41-54. Mr. Buck states that two prominent areas occupied by poor whites were the pine barrens of south central Georgia and a barren section of pine woods east of the Pearl River in eastern Mississippi. See also "The Tradition of 'Poor Whites'", by A. N. J. Den Hollander in *Culture in the South*, edited by W. T. Couch.

24/ Pp. 488-490.

25/ "The Ante Bellum South: A Geographer's Interpretation", *Annals*, Association of American Geographers, XXI, p. 22.

26/ See Hesseltine, op. cit., pp. 332-333; Dodd, op. cit., p. 40; Gray, op. cit., p. 811.

river so that passage could be made over these obstructions led to long delays, and voyages were perilous. Between 1832 and 1836 a short canal was built around Muscle Shoals, but because of improper construction proved almost a complete failure. 27/ A self-sufficing form of farming was almost inevitable under such conditions.

Although the various shoals were serious obstacles, they did not prevent all river transportation, particularly the floating of products downstream during high water. Among other products, some cotton got over the barriers. But Franklin County faced an additional obstacle in that its major stream, the Elk River, was inadequate for expeditious water transportation. The Elk River rises only a few miles beyond the eastern boundary of the county in the Cumberland Plateau. Throughout its course in the county its width and depth, though variable, are not adequate to provide buoyancy for substantial rafts. This is said with full cognizance of the fact that accounts of the local history usually repeat the claim that Franklin County, early in the last century, was one of the foremost cotton-producing counties in the State and that this cotton was rafted down the Elk, Tennessee, Ohio, and Mississippi Rivers. 28/ For the moment it is to be remembered that an early problem of transportation in large part conditioned the agricultural enterprise of the county, and that the farming techniques and patterns that were established cast long shadows into the future.

Early Agriculture in Franklin County.

The most compelling consideration that conditioned the farming enterprise was the question of subsistence in a rather isolated section. After rude frontier huts had been constructed, gardens and patches of corn were planted to vary the diet largely composed of game. Livestock was soon introduced and it provided more and more of the meat supply. Stock roamed at large, the cattle feeding on available grasses, and the swine feeding and fattening on the abundant masts. Additional land was soon cleared for the growing of more corn, some wheat, and some cotton. The self-sufficiency of farm life applied also to clothing -- the first purpose of the cotton patch as well as of sheep was to supply home needs.

It is difficult to ascertain the exact part that cotton played in the early history of the county. Marketing cotton presented problems. In addition, conditions for growing the plant were not of the best in this county, which is on the margin of the Cotton Belt. Only within the last decade have early maturing varieties been introduced into the county. The first census of agriculture (1840) reports 311,818 pounds of cotton gathered in the county in 1839, and in 1849 it produced 637 bales of 400 pounds each --

27/ See J. Haden Alldredge, et al., *A History of Navigation on the Tennessee River System*, p. 62

28/ *The Truth and Herald*, Winchester, Tennessee, March 7, 1935. There are further reasons why Franklin County did not develop into an important cotton-producing center, but such reasons are secondary and will be considered more fully later.

rather modest production records. From 1859 to 1909, only one census (1869) credits the county with a total yield of over 200 bales of cotton [29/] (See Table 30).

In the light of these figures, some of the claims regarding cotton production in Franklin County seem somewhat exaggerated. For instance, it is claimed that by 1815 there were in the county "more than a dozen gins and the county was marketing more cotton than all the rest of the state." [30/] It is claimed that in 1836 the county exported about 4,500 bales, but it is added that the commercial importance of Salem — a cotton buying, storing, and shipping center on the Elk River from which cotton was floated down the river — declined rapidly thereafter because of the completion of the Nashville, Murfreesboro, and Shelbyville turnpike, which directed all trade to Nashville.

If Franklin County was the foremost cotton-producing county in Tennessee in 1815, this must be ascribed in part to its former size and in part to the fact that western Tennessee, the heavy cotton-producing area of the State ever since its settlement, was not ceded by the Indians until 1818. Even considering its former size, the production figure of 4,500 bales seems large, for Marion, Coffee, Grundy, and Moore Counties, which were wholly or in part ceded by Franklin County, were not and are not leading cotton-producing counties.

Although the 1840 census of agriculture covered only a few items, these show, in a rather imperfect way, the farming activities of the county at that time. The data are summarized in table 1. Cotton, when produced, was marketed with difficulty. Livestock, however, was equipped to transport itself. The destination of this stock varied. East Tennessee cattle were driven northward, perhaps in stages, as far as Philadelphia, but the county seems always to have found its better market in the South. The Cotton Belt early became a food-importing zone and the county has profited from this fact from its earliest days. Pork was more popular on the plantations than beef; hence the emphasis on hogs.

29/ See p. 87 below. The only acceptable data on cotton production in the Southern States prior to 1839 are those compiled by Levi Woodbury and submitted in his "Letter from the Secretary of the Treasury Transmitting Tables and Notes on the Cultivation, Manufacture, and Foreign Trade of Cotton, Mar. 4, 1836" (House Ex. Doc., 24 Cong., 1st sess., IV, No. 146). These figures are by States Mr. Woodbury admits that his figures are imperfect since he was not able to find "any official returns of either the General or the State Governments." He based his figures on the best data available, "such as the foreign exports of cotton from each State, the exports coastwise, the quantity supposed to be exported from each not grown within its limits, and the amount yearly consumed within its limits."

30/ MacKellar, op. cit.

Table 1.--*First agricultural census figures for Franklin County, 1840* 1/

Item	Unit	Quantity or Value
Horses and mules	Number	4,773
Meat cattle	Number	11,107
Sheep	Number	9,531
Swine	Number	39,334
Value of all poultry	Dollars	8,717
Production:		
Wheat	Bushels	49,869
Barley	Bushels	265
Oats	Bushels	102,929
Rye	Bushels	365
Corn	Bushels	644,960
Wool	Pounds	23,618
Potatoes	Bushels	20,286
Hay	Tons	27
Tobacco	Pounds	4,600
Cotton gathered	Pounds	311,818

1/ Data taken from Census reports.

Central and east Tennessee lie in the Corn and Winter Wheat Belt, 31/ and from pioneer days these sections have produced varying quantities of wheat. Prices for wheat were fairly high until the tide of migration opened up the vast interior of the country. Since then, its production in Tennessee has been carried on under severe competition and frequently in the face of discouraging prices.

The barley, oats, rye, potatoes, and tobacco that were produced in 1840 were mainly consumed locally. Ground corn meal was consumed to a considerable extent and so was the "essence of corn"— distilled liquor. Whiskey, as well as brandy, has at times been exported from the county in considerable quantities. Brandy was made from apples and peaches, which were readily produced on the slope lands adjacent to the plateau. By the close of the century these fruit trees were attacked by various fungi and diseases, and most of them were destroyed. Apparently no serious effort was made to save the trees or to supplant them.

31/ Baker, O. E., "Agricultural Regions of North America", *Economic Geography*, Vol. 3 (1937), pp. 309-39.

Slaves were a form of property and source of income in the agricultural enterprise of Franklin County before the Civil War. The Census of 1850 credits Franklin County with a white population of 10,085 and a Negro population of 3,683, of which 60 were free Negroes. These Negroes were clearly not fully occupied in the production of cotton but were engaged in a multiplicity of tasks incident to diversified farming, an enterprise marked by simplicity and retardation. In the years before the Civil War, the rapidly expanding Cotton Belt relied largely on Virginia, Maryland, Kentucky, and Tennessee for its supply of slaves. 32/ In these States, according to Bancroft, many thousands of Negroes were unprofitably employed as slaves but yielded substantial returns when placed on the block. 33/ Bancroft estimates that Tennessee exported an annual average of 2,568 from 1850 to 1860. 34/ Since west Tennessee was by this time a heavy cotton-producing center, it is reasonable to assume that these exported slaves came largely from central and southern, and in part from eastern Tennessee. That slaves represented an important export for Franklin County was confirmed in several interviews.

Transportation Improvements.

Emphasis has been placed on the fact that in the early days of the county no effective and reliable mode of transportation was available for bulky farm products. Shortly after 1836, according to Major MacKellar, the Nashville, Murfreesboro, and Shelbyville turnpike was constructed, and upon its completion the trade of Franklin County was directed to Nashville, about 100 miles away. This was still a formidable distance to transport bulky goods, and so the emphasis in agriculture remained largely as it was before.

During the 1850's the railroads came. The Nashville and Chattanooga Railroad penetrated the Appalachian Plateau at Cowan in Franklin County in 1853 by means of a tunnel that was once among the famous tunnels in the country, and by January 6 of the next year through trains connected the two cities for which the road was named. 35/ In 1850 the Winchester and Alabama Railroad was incorporated, to run from Winchester in the direction of Huntsville, Alabama, and by 1859 train service between Decherd, Winchester, and Fayetteville was established. 36/ These railroads supplied all parts of the county with adequate railroad service

Franklin County in The 1860's

The early 1860's may be said to mark the close of one chapter in the history of the South as well as the Nation and the beginning of another. This period must be considered carefully in any historical examination of the South or parts of it

32/ See Bancroft, Frederic, *Slave-Trading in the Old South.*
33/ *Ibid.*, pp 12 ff.
34/ *Ibid.*, pp 402-3.
35/ MacKellar, *op. cit.*; Hamer, *op. cit.*, Vol. I, p. 432.
36/ Hamer, *ibid.*, pp. 433-34.

Population and Size of Farms

The population of Franklin County had become fairly stable by 1860. Emigration of both whites and blacks (blacks, sold) had begun. The white and Negro population of the county in 1850 and 1860, according to the censuses, was as follows:

	1850	1860
Total whites	10,085	10,249
Free Negroes	60	48
Slaves (Negroes) . .	3,623	3,551

Migration westward, particularly to Texas, was general in the South by 1860, and many Franklin County people went there in the 1850's and in succeeding decades. The flow westward was augmented by the fact that considerable tracts of worn-out and gullied land had developed in the county.

The 3,551 slaves in the county in 1860 were held by 561 slaveholders.[37] In a total white population of 10,249, it may be assumed that there were about 2,000 white families, and of these slightly more than 25 percent held one or more slaves. This approximates the composite picture of the South in that roughly three-fourths of the white people did not have slaves and were fully dependent on their own work for a livelihood.[38]

The census of 1860 gives the first breakdown into size of farm holdings. In Franklin County there were 1,053 holdings of 3 acres or more, and 71.4 percent of these farms consisted of 100 acres or less. Of the remaining 301 farms, 286 ranged in size from 100 to 500 acres, and since many early grants by the States consisted of 200 acres and less, it seems reasonable to believe that the majority of the farms in this group approached the minimum rather than the maximum in size.[39] Certainly the small farmer prevailed agriculturally, if not politically, in the county.

37/ The distribution of these slaveholders by number of slaves owned, as listed in the census, is as follows:

	Number of Slaveholders		Number of Slaveholders
1 slave	132	8 slaves.	20
2 slaves	91	9 "	24
3 "	45	10 and under 15 .	48
4 "	38	15 and under 20 .	26
5 "	37	20 and under 30 .	28
6 "	36	30 and under 40 .	6
7 "	26	40 and under 50 .	4

38/ Hesseltine, William B., *op. cit.*, pp. 321-22.

39/ Land holdings in Franklin County are listed as follows in the Census of 1860:

3	acres	and	less	than	10	. . . . .	12	holdings
10	"	"	"	"	20	. . . . .	125	"
20	"	"	"	"	50	. . . . .	358	"
50	"	"	"	"	100	. . . . .	257	"
100	"	"	"	"	500	. . . . .	286	"
500	"	"	"	"	1000	. . . . .	14	"
1000	"	"	over			. . . . .	1	holding

Farming Conditions and Practices in Districts 4, 5, and 9 of Franklin County

It has been pointed out that the German-Swiss are chiefly located in district 5 and that the control groups are composed of the remaining white farmers in district 5 and the white farmers in districts 4 and 9. Availability of the original agricultural schedules for the census of 1860 for the county makes it possible to present a rather complete picture of the farming practices prevailing in these districts immediately before the Civil War and the decade before the coming of the German-Swiss. Only significant items from the agricultural schedules are presented.

Farm Tenure. Table 2 gives data on farm tenure in districts 4, 5, and 9 in 1860 and 1935. Figures for 1935 are given merely for comparison. Landownership was the rule in districts 4 and 5 in 1860, but tenancy was already surprisingly prominent in district 9. This situation in district 9 resulted from the survival of a few large holdings which were acquired in the early period of the county or State. This contrast in landownership between the three districts had largely disappeared by 1935. This fact suggests that tenancy in this county -- and no doubt elsewhere -- is not merely the result of certain large holdings acquired in early times.

Table 2.--*Farm Tenure in districts 4, 5, and 9, Franklin County, 1860 and 1935* [1/]

District and tenure	Number of operators		Percentage distribution	
	1860	1935	1860	1935
	Number	*Number*	*Percent*	*Percent*
District 4:				
Owner	68	135	87.2	41.8
Tenant	10	188	12.8	58.2
All	78	323	100.0	100.0
District 5:				
Owner	35	87	85.4	54.0
Tenant	6	74	14.6	46.0
All	41	161	100.0	100.0
District 9: [2/]				
Owner	68	91	60.7	41.4
Tenant	44	129	39.3	58.6
All	112	220	100.0	100.0

1/ Data for 1860 were obtained from photostated census material in the possession of Dr. and Mrs. Frank Owsley, Vanderbilt University, who obtained the data from original agricultural schedules (now in possession of Duke University) and population schedules (in the Bureau of the Census). Data for 1935 were obtained from photostated material (summarized by districts) in the possession of the Tennessee Valley Authority.

2/ In 1870, part of district 9 was ceded to district 18. See Census of 1880, Vol. I, p. 333. The other two districts apparently have remained the same, for no changes are indicated in the census records.

Slaves, Farm Acreages, and Farm Values. Ownership of slaves was much more prevalent in districts 4 and 5 than in the county as a whole (table 3). In these districts 68 and 71 percent, respectively, of the farmers reported slaves whereas for the county as a whole only about 25 percent of the families had slaves. 40/ This suggests correctly that these districts were more productive than most of the county. Some tenants held slaves.

Only 27 percent of the farmers in district 9 reported slaves; about 40 percent of the farmers in this district were tenants. District 9 has relatively more good land than districts 4 and 5.

The census of 1860 divides land holdings into "improved" and "unimproved". Improved land was cleared but not necessarily all devoted to tilled crops. The average holdings of improved land ranged from 87 to 143 acres for owners, whereas that of tenants ranged from 31 to 77 acres. A considerable amount of land remained unimproved. In part this represents land on the Cumberland Plateau and in adjacent swamps and barrens -- much of this land has never been used for farming.

The low value of the farm implements indicates that they were extremely simple. Practically all were made in local shops. The German-Swiss found the agricultural practices in the county crude and retarded. The bull-tongue plow served for plowing and cultivating. Locally-made wagons were common. Other implements consisted chiefly of hand tools of small cash value (table 3).

Corn, Cotton, Swine, and Cattle. Farmers in districts 4, 5, and 9 produced little cotton in 1860 (table 4). Commercial cotton production was almost nonexistent in districts 4 and 5; only 26 percent of the farmers in district 9 grew cotton and they reported the small average of 2.5 bales per farm. The latter was clearly the leading cotton-producing district of the county, since it produced 71 of the 163 bales credited to the county by the census of 1860. Corn and hogs were clearly the important farm products in the county.

Small Grains and Hay. Wheat production was more common in Franklin County during the nineteenth century than it has been in recent years. From 63 to 83 percent of the farmers in districts 4, 5, and 9 produced some wheat in 1859 (table 5). All small grain at that time was sown by hand and reaped by hand tools. Rye and oats also played larger parts in the farming scheme than they do today.

Data on hay production are revealing with reference to the care given to horses, mules, cattle, and sheep. These animals had to roam to find food -- the usual frontier practice. Hay was commonly handled with a forked stick. The German-Swiss brought with them the pitchfork with iron prongs. This device was so amazing to the natives that the pitchforks had to be kept in the houses for the first few years.

40/ See p. 20 above.

Table 3.--*Slave ownership, farm acreages, and value of implements in districts 4, 5, and 9 of Franklin County, 1860* [1/]

Item and district	Percentage of farmers reporting			Number or amount reported					
				Average			Median		
	Owners	Tenants	All	Owners	Tenants	All	Owners	Tenants	All
	Percent	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Slaves:									
District 4	71	50	68	8	3	6	6	4	6
District 5	80	17	71	10	12	10	7	x	8
District 9	38	9	27	10	3	9	6	3	4
	Percent	*Percent*	*Percent*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*
Acreage improved:									
District 4	100	100	100	140	54	129	120	50	100
District 5	100	100	100	143	77	135	120	35	100
District 9	100	100	100	87	31	65	60	27	40
Acreage unimproved:									
District 4	97	60	92	213	82	202	123	50	115
District 5	94	50	88	169	87	162	100	45	95
District 9	87	16	59	199	85	187	50	100	58
	Percent	*Percent*	*Percent*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Cash value of farm:									
District 4	100	100	100	4,540	860	4,180	3,798	1,500	3,000
District 5	100	100	100	3,680	2,317	3,480	3,000	700	2,950
District 9	100	100	100	3,370	768	2,353	1,250	600	978
Value of implements:									
District 4	100	100	100	131	25	117	100	13	90
District 5	100	83	97	102	64	96	80	90	90
District 9	100	93	97	97	24	69	65	10	35

1/ Data were obtained from photostated census material in the possession of Dr. and Mrs. Frank Owsley, Vanderbilt University, who obtained these data from original agricultural schedules (now in possession of Duke University) and population schedules (in the Bureau of the Census).

Table 4.--*Quantity of corn, number of swine, all cattle, milk cows, and bales of cotton reported in districts 4, 5, and 9 of Franklin County, 1860* [1/]

Item and district	Percentage of farmers reporting			Quantity reported					
				Average			Median		
	Owners	Tenants	All	Owners	Tenants	All	Owners	Tenants	All
	Percent	*Percent*	*Percent*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Corn:									
District 4	100	100	100	1,200	568	1,117	1,000	538	1,000
District 5	100	100	100	990	792	962	800	450	800
District 9	100	100	100	773	369	607	500	350	400
	Percent	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Swine:									
District 4	97	80	95	63	26	59	45	18	40
District 5	94	100	95	48	21	43	35	19	31
District 9	99	80	91	33	17	28	25	16	20
All cattle:									
District 4	100	100	100	16	8	15	11	6	11
District 5	100	83	97	13	9	13	10	6	10
District 9	100	86	95	11	4	8	9	3	6
Milk cows:									
District 4	98	100	99	5	2	5	--	--	--
District 5	100	67	95	5	3	5	--	--	--
District 9	100	82	93	4	2	3	--	--	--
	Percent	*Percent*	*Percent*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*	*Bales*
Cotton: [2/]									
District 4	3	--	3	1	--	1	--	--	--
District 5	6	--	5	5	--	5	--	--	--
District 9	25	27	26	3	2	3	--	--	--

1/ Data were obtained from photostated census material in the possession of Dr. and Mrs. Owsley, Vanderbilt University, who obtained these data from original agricultural schedules (now in possession of Duke University) and population schedules (in the Bureau of the Census). Figures for corn and cotton apply to 1859.

2/ Cotton was reported by only 2 farmers (owners) in districts 4 and 5 respectively and by 17 owners and 12 tenants in district 9.

Table 5.--*Wheat, rye, oats, and hay reported in districts 4, 5, and 9 of Franklin County, 1860* [1]

Item and district	Percentage of farmers reporting			Average quantity reported		
	Owners	Tenants	All	Owners	Tenants	All
	Percent	*Percent*	*Percent*	*Bushels*	*Bushels*	*Bushels*
Wheat:						
District 4	85	70	83	146	76	137
District 5	74	50	71	79	68	78
District 9	74	48	68	128	27	101
Rye:						
District 4	32	--	27	56	---	56
District 5	14	--	12	43	---	43
District 9	6	5	5	26	8	20
Oats:						
District 4	32	10	29	72	100	73
District 5	46	50	47	115	46	104
District 9	13	2	9	92	150	98
	Percent	*Percent*	*Percent*	*Tons*	*Tons*	*Tons*
Hay:						
District 4	6	--	5	4	---	4
District 5	3	--	2	9	---	9
District 9	3	--	2	12	---	12

1/ Data were obtained from photostated census material in the possession of Dr. and Mrs. Owsley, Vanderbilt University, who obtained these data from original agricultural schedules (now in possession of Duke University) and population schedules (in the Bureau of the Census).

Horses, Asses and Mules, Sheep, and Wool. Farm work stock in 1860 consisted of horses, mules, and work oxen. 41/ Horses and mules were produced in surplus numbers, and were driven to market in the Cotton Belt. Sheep were also more common than they are today. Part of the wool was converted into cloth on the farm and part was sold. As these animals foraged at large, any return on them was almost pure gain. Data on horses, asses and mules, sheep, and wool reported in districts 4, 5, and 9 in the 1860 census are given in table 6.

41/ Included with "all cattle", although listed separately in the census. One hundred and fifty-three work oxen were reported in district 4; 44 in district 5; 130 in district 9.

Table 6.--*Horses, asses and mules, sheep, and wool reported in districts 4, 5, and 9 of Franklin County, 1860* 1/

Item and district	Percentage of farmers reporting			Average quantity reported		
	Owners	Tenants	All	Owners	Tenants	All
	Percent	*Percent*	*Percent*	*Number*	*Number*	*Number*
Horses:						
District 4	98	100	99	7	3	6
District 5	100	100	100	7	3	6
District 9	97	91	95	4	2	3
Asses and mules:						
District 4	53	30	50	4	1	4
District 5	46	83	51	4	3	4
District 9	44	18	34	4	1	3
Sheep:						
District 4	68	30	62	23	16	23
District 5	60	50	58	27	13	25
District 9	53	27	43	19	8	16
Wool:	*Percent*	*Percent*	*Percent*	*Pounds*	*Pounds*	*Pounds*
District 4	68	30	63	41	35	41
District 5	57	50	58	38	28	42
District 9	49	18	41	40	18	36

1/ Data were obtained from photostated census material in the possession of Dr. and Mrs. Frank Owsley. Vanderbilt University, who obtained these data from original agricultural schedules (now in possession of Duke University) and population schedules (in the Bureau of the Census).

Other items on the agricultural schedules of the 1860 census are not presented here

The Civil War.

One of the striking paradoxes in the history of Franklin County is its unanimity in behalf of the South in the Civil War issue. East Tennessee was then and is now largely Republican and many a recruit for the Northern army came from this section of the State. Even as far west as McNairy County (about 100 miles east of Memphis) the small farmers were largely pro-North in sentiment, and almost one-third voted against secession. 42/ In spite of the predominance of small farms and the great predominance of whites over Negroes - at a ratio of about 3 to 1 -Franklin County was strongly pro-South in its feelings and action

42/ Alexander, Frank DeWitt, *Owners and Tenants of Small Farms in the Life of a Selected Community; A Cultural Analysis*, Ph.D. thesis, Vanderbilt University 1938 (Unpublished.)

Because of its position between the North and the deep South, Tennessee naturally saw a good deal of fighting and more particularly the stationing and movement of soldiers who foraged freely for food and feeds, and sometimes burned or damaged houses. Farmers of the county were ruined by the war. They held many thousands of dollars of Confederate money, which was valueless at the close of the war. The Negroes or helpers were mostly gone, [43/] as were the livestock and feed. It took at least 3 to 4 years to make a bare beginning at recovery. The loss of the slaves and the more serious loss of the best man-power made the prospects for the county an unpromising one.

Casual examination of the census figures on agriculture for 1860 and 1870 does not reveal the full extent of the devastation. For instance, the cash value of the farms in Franklin County was listed as $2,772,390 in 1860 and as $2,784,364 in 1870. On the face of it, this represents a slight increase in value. But in the meantime there was an increase of 204 farms containing 3 or more acres, and the county is credited with an additional 6,400 acres of improved land. Moreover, values in the census of 1870 were reported in terms of a depreciated currency and so must be reduced by one-fifth to approximate 1860 values. [44/]

Thus, without allowance for any probable increase in farm values between 1860 and 1870 in the absence of war, over $500,000 in the value of farm property was lost. A much greater loss -- without allowance for an increase in value of farm property from 1860 to 1870 -- was effected by the liberation of slaves. According to Hamer, the average value of slaves in the State in 1859 was $854.65. [45/] Since in 1860 the county was credited with 3,551 slaves and 561 slaveholders, the slaveholders in this one county lost over $3,000,000 in assets, or an average of about $5,400 per slaveholder. The value of the slaves exceeded the cash value of all the farms in the county as listed in the census reports for 1860 and 1870. [46/] The impact of this blow is not to be minimized. A way of life by the more prosperous farmers had been shattered, and only the passing of time has revealed how the pieces have been mended, or remained unmended.

Some of the other agricultural figures for 1870 show a rapid recovery in terms of physical units. The county reported about 1,600 fewer horses and mules in 1870 than in 1860 (3,695--5,381), about 2,000 fewer cattle (7,821--9,808), 660 fewer sheep, (8,820--9,480), and about 6,000 fewer hogs (27,074--33,011). Thanks to the abundance of woodland in the South, foundation stock was retained in many places for future replenishment. Franklin County was perhaps more fortunate in this respect than many counties as about two-fifths of its area lies on the forested Cumberland Plateau, and as the barrens and swamplands in the western part were too large for careful combing by Union soldiers. Corn production dropped nearly 300,000 bushels as shown by the census reports (760,385--467,757) but cotton production increased from 163 to 289 bales.

43/ Most of those that remained were too old or otherwise physically incapable of leaving.

44/ Conklin, in Hamer, *Tennessee--A History*, Vol. II, p. 833.

45/ Ibid., Vol. I, pp. 464, 465.

46/ As was pointed out on page 22 above, slaves were relatively much more common in districts 4, 5, and 9 than in the county as a whole. Land values, however, were also high. According to Hamer's figure for the average value of slaves in 1859, the total value of all slaves in these districts was $819,609 in 1860, whereas the cash value of the farms was reported as $732,835.

So much for 1860 and 1870 census figures. It was in this decade that the first German-Swiss arrived in the county, and what they found will later be added to the statistical picture presented thus far.

The First German-Swiss Settlers.

In 1838 a German-Swiss immigrant stone mason, Samuel Kaserman, settled near New Philadelphia, Ohio. Upon his arrival, he bought 40 acres of unimproved land, although he did little farming. As new industries flourished in this new country, he in turn operated a tannery, a hotel, a wholesale business, and a flour mill. He had interests in iron works and salt works -- the latter turned into or proved to be oil wells. His industries flourished until he returned to Switzerland for a visit in 1857 to 1858. When he came back little was left of his industries, but he resumed various enterprises.

John Kaserman, his only son, went with his father to Switzerland, married there, and upon his return to Ohio bought cattle, slaughtered them, sold the meat, and tanned the hides. In the Civil War, John was a sharpshooter and captain in the Union forces. When a serious case of pneumonia, with complications, occurred shortly after his return from the war his doctor warned him that unless he went South he would not live to see two more winters.

Then came the question of just where to go. The aging father, Samuel Kaserman, and the son apparently were both unusual pedestrians, for they spent two winters covering parts of Kentucky, Virginia, North Carolina, South Carolina, northern Georgia, Alabama, and eastern Tennessee on foot. After this extensive survey they found themselves in Winchester, Tennessee, and started to walk in a southwesterly direction. To the east and south of them lay the tree-covered, bold escarpment of the Cumberland Plateau. Suddenly the father pointed to the beautiful escarpment, observed similarities between it and certain Swiss scenes, and said that this was the spot where he wished to spend the rest of his days.

Land was for sale on every hand. Very near the place where the above observations were made, arrangements were made for the purchase of a farm of 280 acres. The sale was made on January 23, 1868, at a price of nearly $21 an acre, 47/ or a total sum of $6,000. A cash payment of $2,000 (gold) was made, and the balance was to be paid within a year or two. The father had about $4,000 in assets and cash and the son $3,000.

John Kaserman was responsible directly or indirectly for attracting nearly every German and German-Swiss family that settled in the Belvidere section of Franklin County. His formal education was limited, but he was one of the boldest, best read, and most ingenious farmers to settle in the county, or, perhaps, in Tennessee. Much of the success of the German-Swiss in Franklin County must be attributed to his versatility and leadership. It is to be noted, however, that neither Samuel nor John Kaserman had been a farmer.

47/ Most of the land bought by other German-Swiss was obtained for about half as much, or at prices ranging from $5 to $15 an acre. The place bought by the Kasermans had about 100 acres of good woodland, which increased the per-acre price.

Their occupational backgrounds included various activities, both in the North and in Switzerland. It is also to be remembered that their combined assets amounted to about $7,000 when they came South, but that nearly all of this was immediately invested in land. The balance, it may be presumed, was largely exhausted -- if not completely exhausted -- in getting located and in starting to farm.

A few details about the newly purchased farm suggest conditions that were widespread throughout the South. A 4-room brick house stood on the farm place; the brick in the structure had been produced "on the spot". There was a small barn, a log smoke-house, and a ramshackle structure in which slaves had been quartered. About 100 acres were still in woodland. The remaining 180 acres represented tillable land, but less than half was devoted to crops. The rest contained a number of gullies deep enough to hide a man on horseback. 48/ The fields were largely covered with sassafras and persimmon bushes, blackberry briars, blackjack, broom sage, and scrub cedars. A number of locust thickets were scattered over the farm, even in the tilled fields -- the practice had been to plough around them.

Yields from the fields that were still under tillage were distressingly small, and the former owner had frequently said that the land would not support him any more. The corn yield averaged less than 10 bushels an acre. The Kasermans noticed that the general use of manure on fields was an almost unheard-of practice. When lands were worn out and eroded, new lands were called for, either locally or at a distance (Texas was then beckoning), and Franklin County furnished its share of migrants who hit the westward trail.

It may seem strange that newcomers should be attracted to these worn-out lands when the farmers living there were thinking in terms of new lands locally or in the West. The paradox can be reconciled by reflection on the conditions and practices that prevailed in Franklin County -- the South at large, for that matter -- and on the background of the Kasermans. They found, like Olmsted a decade before, that the agricultural management in east Tennessee was "nearly as bad as possible." 49/ The Kasermans were familiar with the farming practices of both Switzerland and the North. In Switzerland, soil conservation and fertilization was centuries old. Cereals and livestock were raised, but by methods that can only be contrasted with methods they

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48/ The practice of contour plowing was not unknown in Tennessee at the time of the Civil War. At least two essays in the *Second Biennial Report of the Tennessee State Agricultural Bureau, 1856-57,* strongly advocated to "plow upon a level" or "level culture". See pp. 392-402 and 510-18. Gray writes that "horizontal plowing had to make its way against a storm of ridicule, but before the close of the period (1860) it was widely employed, especially in the piedmont area from Maryland around to Texas." See *History of Agriculture in the Southern United States to 1860,* pp. 800-1. Olmsted found that "hill-side" plowing was sometimes employed on slopes in the lower Mississippi River region during the 1800's. The practice was not very successful. See, *A Journey in the Back Country,* pp. 18-19. Those who have read *Gone with the Wind* by Margaret Mitchell may recall that "the rolling foothill country of north Georgia was plowed in a million curves to keep the rich earth from washing down into the river bottoms." (P. 7, quoted with permission of the publisher.) See also *Early Erosion-Control Practices in Virginia,* Miscellaneous Publication No. 256, U. S. Department of Agriculture.

49/ *A Journey in the Back Country,* op. cit., p. 222.

found in the South. Erosion was constantly guarded against, by terraces--mostly hand made- by planting grasses and legumes, by various methods of cultivation, and, in some instances, by carrying washed-down soil back to its former place. Stock grazed some in summer on slope lands, but spent most of the year in stalls. Every particle of manure was utilized as fertilizer. Rotation was an established practice. Food and feed plants were used to the last blade in a cycle which had as its objective the maintenance of fertility at a maximum. The use of lime was common and had been known since the time of the Romans. Alfalfa, one of the best hay crops known, was grown on nearly every Swiss farm. Both Kasermans were voracious readers, and, among other books, owned and had read Justus von Liebig's classical treatise on soils.[50]

Residence in the North had provided the Kasermans additional experience which must have inclined them to optimism in their new enterprise. In Europe the small peasant farmer had rather simple and crude tools, but with persistent application these brought fairly good results. The North, at this time, was in a period of rapid change and improvement in farm implements.[51] Good steel plows were used; the reaper was used generally in sections where wheat was grown on a commercial scale; and the mower was coming into general use. Methods of planting and cultivating corn had been much improved and many other improvements were adopted with surprising rapidity.

These developments stood in marked contrast to what was found in Franklin County where the crude frontier bull-tongue had been scratching the soil. At its best, this affair penetrated the soil only a few inches. No reaper was owned or operated in the county prior to the coming of the German-Swiss;[52] this meant that the rather considerable quantity of wheat was harvested with a cradle. Harrowing was usually accomplished by pulling a fallen tree over the ground. Corn was planted and hoed by hand, but corn fields often became weed patches. Rotation of crops was unknown and many of the older citizens recall that corn was generally planted between standing stalks of the previous crop. Few if any cattle were fattened in feed lots, and hogs were fattened for only a short time before slaughter. Stock roamed at large, summer and

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50/ Von Liebig's *Die Chemie in ihrer Anwendung auf Agricultur und Physiologie* was announced in 1840 and his study gave rise to the manifold investigations in the chemistry of soils and the relation of soil to plant growth. He held that certain newly-discovered materials, such as nitrogen, phosphoric acid, potash, lime, and other substances, were essential to the growth of plants, and his investigations shortly led to the preparation of commercial fertilizers. See Milton Whitney, *Soil and Civilization*, p. 11

51/ See Bidwell and Falconer, *History of Agriculture in the Northern United States, 1620-1860*, pp 281-305

52/ "An Essay on Practical Farming" by John R Bain, read before a farmers' organization in Bedford County in 1857, contained the following statements: " . . . the ear is almost constantly saluted now with that peculiar clatter of the Reaper, and then with the whizzing, buzzing noise of the Thresher " *Second Biennial Report of the Tennessee State Agricultural Bureau, 1856-57*, p 415 Apparently the reaper was already known and used in some sections of the Central Basin of Tennessee before the Civil War Moreover, some cotton planters in west Tennessee had learned that "fields tired with cotton" were improved by wheat. A report on this practice states that "the use of the improved reapers of the present day enables the planter to husband large fields of wheat without neglecting the cotton fields " *Ibid.*, p 96 Thus the reaper was not unknown in west Tennessee. Improved farm machinery, however, has never been very common in the South generally

winter, and so only a little manure accumulated from work stock. This manure was ignored as long as possible; when it became a nuisance, a new shack was erected. Some of the natives built sheds adjacent to and, in part, over streams. The walls of the structure did not quite reach the ground and so permitted a current of water to pass underneath. Work stock in the barn could thus water itself, and when the stream rose after heavy rains the nuisance in the form of manure was washed away. 53/ Neither this nor the general skinning type of farming was unique to Franklin County. Indifferent farming methods prevailed generally on the frontier.

The diet of the settlers resolved itself largely into fried foods and a few vegetables in season. Most of the houses were simple, 1- to 4-room structures, built of unfinished lumber, and not painted. About 3 months of schooling was provided for the children and very little reading was done at home. Certainly the farming practices did not reflect any improvements that good farm journals might have suggested. Little progress had been made since frontier days, and much land was worn out.

While Kaserman noted the wasted land resources, he also noticed that the fault lay more in the practices than in the environment. Outmoded and destructive methods of tillage persisted in spite of pending ruination. He also noticed, as did the Swiss who arrived later, that the prevailing practices were not exacting in their requirements of human efforts and approved techniques. The enterprises of the larger landholders, particularly the former slaveholders, were completely demoralized by the war. Negro tenancy could not well be established in a county on the margin of the Cotton Belt in which small farmers predominated.

Although the older Kaserman seems to have chosen Franklin County because the physical landscape reminded him of Switzerland, observations must also have convinced him and his son that but little of the agricultural potentialities of the county had been realized. Just how much of Kaserman's optimism was based on accurate knowledge of the soil is not known. Natives informed him that newly cleared land yielded abundantly — as high as 75 bushels of corn an acre. In a decade or two, however, production greatly diminished and frequently land had reached the abandoning stage or the stage when recuperation must take place.

The red limestone earth section of the county is characterized by numerous sink holes with gradual slopes. The erosion in the sink holes, of which there might be several on a farm, was towards the center of the minute catch basins. Top soil was, therefore, rarely washed off the farm but was deposited in sink holes. Frequently the outlet of a hole blocked up and a pond was formed. As the slopes of the basin were stripped of soil, the basin received greater deposits of fertile soil, and it is here that cultivation of crops was more and more concentrated. As drainage frequently became

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53/ The following is an account of farming methods in Missouri in 1849: "Farming here is conducted on the regular skinning system . . . most of the farmers in this country scratch over a great deal of ground, but cultivate none. . . . It is corn, corn, corn, nothing but corn. . . . Take the state over and I have no idea that one farmer out of fifty has ever hauled a load of manure to his corn fields since he has been in the state. I have doubts, even, whether one in a hundred has ever done it. . . . Some, however, have the foresight and sagacity to avoid all this by building their stables, barns, etc., over or contiguous to a ravine, by which they are drained, so that each shower abates the nuisance, and the lucky farmer is not troubled with muddy lots and rotting barns." Quoted in Bidwell and Falconer, op. cit., from *Cultivator*, new series VI (1849), p. 302

imperfect in these sinks, the soil remained cold and wet in spring which retarded cultivation. If necessary, thought Kaserman, the soil could be returned to the adjacent slopes.

Kaserman was convinced that Franklin County had agricultural possibilities. Instead of encouraging people to abandon the so-called worn-out lands, he encouraged industrious workers and farmers to move in and build up the land. He immediately set about corresponding with other German-Swiss farmers in Ohio and abroad. He wrote numerous letters to German publications in the North, setting forth the agricultural opportunities in the county. His opinions and descriptions must have been convincing, for shortly other German-Swiss joined him. A few came in the late 1860's, many came in the 1870's, and some during the 1880's and 1890's.

Shortly after Kaserman's arrival in Tennessee, he became a fast friend of J. B. Killebrew, for many years associated with the State Bureau of Agriculture. In 1874 there appeared Mr. Killebrew's *Introduction to the Resources of Tennessee,* prepared under the direction of the Bureau of Agriculture. Kaserman received one of the first unbound copies and took it with him on another visit to Switzerland. The publication served him well in his efforts to persuade other German-Swiss to settle in the South. It stresses the intermediate position of Tennessee between the North and the South, its mild climate, long growing season, and the great range of agricultural products that can be grown. Of particular interest to the German-Swiss must have been the portions stressing the advantages of the State for the production of dairy products[54/] and the chapter pointing out the possibilities of Tennessee as a grape-growing State.[55/] The publication confirmed Kaserman in his optimism and aims and contributed indirectly in persuading more people to migrate to the South.

The German-Swiss Settlement

Source of Immigration.

The great majority of the German-Swiss in the Belvidere community--which was started by the Kasermans--did not come to Franklin County directly from abroad but had spent varying numbers of years in one or several northern States. Apparently most had come to this country during the 1830's, 1840's, and 1850's, and many had established themselves in various parts of Ohio although Pennsylvania, New York, Indiana, Illinois, and Iowa supplied at least one family each. Several families came from what was an unfortunate settlement of German-Swiss at Gruetli, Tennessee.[56/] By 1872 nearly 100 families had settled at Gruetli. They soon realized they had been misled by descriptions and promises. Some remained, faced extreme hardship in their farming enterprise, and to this day are more thorough farmers than the native born.[57/] Many of them left and of these several families joined their former countrymen in Franklin County. Direct immigration from abroad added a limited number to the Belvidere community.

54/ Pp. 140-53.

55/ Pp. 154-72.

56/ See Frances Helen Jackson, *The German Swiss Settlement at Gruetli, Tennessee,* M.A. thesis, 1933, Vanderbilt University. (Unpublished.) After the Civil War, the Appalachian Plateau area was the scene of all sorts of real-estate promotion schemes. The fate of the settlements ranged from tragic to near tragic.

57/ See, *How the Swiss Farmers Operate on the Cumberland Plateau,* Monograph 33, by the Agricultural Economics and Rural Sociology Department, Agricultural Experiment Station, University of Tennessee, 1937.

Regardless of the course taken by these people in reaching their new home, most of them came from the Swiss cantons of Bern, Lucerne, and Zurich. Some came from neighboring cantons, and some were of German extraction. This mixture of German-Swiss and Germans is typical of settlements of these countrymen in the United States.[58]

Motives and Incentives.

It is difficult to speak with precision of the motives and incentives that brought together the German-Swiss community in Franklin County for it was not brought together by one appeal or one main objective--motives ranged from opportunity for marriage to a desire for economic betterment. A surprisingly large number of the settlers mentioned mild climate as the compelling reason for their coming. Others joined close friends. Still others were attracted by what seemed to be agricultural opportunities, particularly cheap land and plenty of trees. Those who came from Gruetli merely escaped from an unpromising situation, although the immediate attraction for several was the chance to do some carpenter work. One of the early settlers had seen the county as a Union soldier and had resolved to return after the war and buy a farm.

Assets of the Immigrants.

A consideration of the assets that the German-Swiss brought to their new home is important, for wealth that was brought does not reflect the development of agricultural potentialities nor thrift and enterprise in the new home. The subject was investigated as carefully as opportunity permitted. Many questions were asked on this score. In addition, all real-estate purchases by the people before 1900 were listed and the terms of sales were carefully noted. These figures checked surprisingly well with data gathered in interviews. A considerable number of the German-Swiss recalled off-hand the exact amount paid for their first pieces of land and volunteered additional information about their means--or lack of means--when they first arrived and settled.

Apparently the combined assets of Samuel and John Kaserman, about $7,000, were exceeded by those of two families that joined the Belvidere community. From these levels, the available means commanded by the immigrants ranged down to nothing. Several had between $1,000 and $2,000 from the sale of their farms in the North, and it is somewhere within this range, it seems, that the average would fall if it could be definitely established. The funds of about one-third of the families who came to the community ranged from almost nothing to a few hundred dollars. This group included those that came from Gruetli, since any money they had originally brought with them had been invested in the virtually worthless land on the Cumberland Plateau, which was surrendered for little or nothing. This group got its start by working as day laborers or carpenters, by renting, and by borrowing a little money. Some of the most enterprising and prosperous farmers in the community today belong to this group.

58/ See, for instance, Faust, *The German Element in the United States,* or any other publication listed in the bibliography dealing with the Germans and Swiss in this country.

That most of the German-Swiss commanded some capital upon their arrival in the South has inclined several to maintain that they had a considerable advantage over the native farmers, who had so recently been despoiled by the war. But it should be remembered that the war had not deprived the natives of the land. Once the immigrants had made their land purchases, they had little if any money left. Many contracted small debts in getting started, for the relocation of a family and household goods was an expensive undertaking considering their limited means. Moreover, the immigrants had to adjust themselves to an environment essentially different from that with which they had some familiarity--particularly in regard to the soils. From the standpoint of material assets, the German-Swiss had no advantage over the local landholders; in fact, many of them could not buy land immediately.

Craftsmanship and Abilities.

Many observers of German-Swiss and German immigrants in this country have found that among these people there were many craftsmen and men of specialized training. Dr. Benjamin Rush noted this as early as 1789 among the German inhabitants of southeastern Pennsylvania (now generally known as the Pennsylvania Dutch);[59] Olmsted noted it during the 1850's among the German immigrants in Texas;[60] and Schafer in his careful studies of agriculture in this country and of Germans in Wisconsin noted this again and again.[61]

A number of specialized craftsmen were among the German-Swiss who settled in Franklin County. The older Kaserman was a stone mason. Several among the settlers were well-trained carpenters and others followed the trade for several years until they were able to buy land. One of the arrivals was a cooper, another a furniture and cabinet maker, and another a blacksmith. These abilities proved exceedingly valuable to the immigrants, since many did not have enough money to establish themselves in farming. Apparently their services were generally preferred to those of native laborers, partly because, as one immigrant stated it, "We worked time and a half without charging for over-time." This ability with hammer and saw also proved valuable in constructing the many large buildings that were soon found on the German-Swiss places.

Most of the immigrants were adept with tools and machinery. An anvil, a forge, and a varying number of tools were standard equipment on their farms, and these proved of great value in conserving time, money, and machinery. With this equipment, the German-Swiss farmer was able to make his own wagon tongues, single trees, double trees, and other wood fixtures. Horses and mules were generally shod on the place. The significance of these practices can hardly be overestimated. It is one of the reasons why successful farmers usually spend their time at home and find farming a year-round activity. These practices are not common among traditional farmers in this area or in the South generally.

59/ *An Account of the Manners of the German Inhabitants of Pennsylvania*, p. 9.

60/ *A Journey Through Texas*, pp. 140-45. On page 178 he writes: "I do not think there is another town in the slave states in which the proportion to the whole population of mechanics, or of persons employed in the exercise of their own discretion in productive occupations, is one-quarter as large as in New Braunfels [town of German immigrants], unless it be some other in which the Germans are the predominating race."

61/ See Schafer's *Social History of American Agriculture*, p. 212, *A History of Agriculture in Wisconsin*, p. 168, and "The Yankee and the Teuton in Wisconsin", *Wisconsin Magazine of History*, Vol. VIII (1923), p. 13. Many other references could be added.

Buildings.

There were a few rather pretentious houses in the county when the German-Swiss arrived but most of the houses were small and were built of unfinished lumber and logs. Shelter structures were small and shack-like. Some of the larger brick houses lent themselves, upon some alterations, to permanent occupation by the German-Swiss. Today two such houses are occupied in the community. The remaining structures were entirely unsuited to the tastes and purposes of the newcomers. The numerous and spacious houses soon erected by these immigrants are an excellent example of the significance of cultural factors in the development of the landscape. Trees were still plentiful on part of the land bought by the German-Swiss and on the nearby plateau.

One of the first large frame houses was built by John Kaserman, in 1874. So substantially was it built that it is still occasionally referred to as the "new house". It has 10 rooms, a basement, and 5 built-in cabinets, made of 1-inch walnut boards, planed down by hand. The weather boards on the outside of the house were similarly planed by hand, although a planing mill in the community soon simplified the task of finishing boards. The joists under the floors are of white oak, are separated by only 11 inches, and are 14 inches deep and 2½ inches thick. The community soon contained numerous ample, well-constructed, painted houses.

Farming methods adopted by the newcomers were also unlike those that prevailed in the county and general area, and they required other large structures. One of the striking departures consisted in the erection of large barns to shelter the livestock which was not allowed to run at large but was put within fences and sheltered during bad weather. This in turn called for the production and storage of hay. Instead of storing it in small stacks, as was generally done in the section, the German-Swiss stored it in their commodious barns. Thus waste was virtually eliminated and the stock could be fed easily. Corn, wheat, and other cereals, produced in large quantities, demanded storage space and shelter sheds were built for the expensive machinery that was soon acquired. With characteristic thoroughness, barns were even constructed for sheltering grain stacks before the grain was threshed. After the threshing, the straw was usually kept under a roof until used.

These farming methods called for numerous and ample buildings. Thus, in the late 1860's, Kaserman built a barn that was 40 feet by 60 feet, during the 1880's a structure 40 feet by 80 feet was added, and during the 1890's another building 80 feet by 80 feet was erected. Sheds were also built. Another German-Swiss built two bank barns, side by side, with dimensions of 50 feet by 80 feet and 60 feet by 80 feet. This makes a structure of 110 by 80 feet. Others built shelters of similar size. That these farm places stand in marked contrast to native places need not be emphasized. Nor do these buildings represent imported wealth or any material advantage enjoyed by the newcomers.

Rehabilitation of the Land

The newly acquired land of the German-Swiss was, according to their testimony and that of others, "a sorry sight". Nearly all of the farms seem to have had fields that were badly eroded and depleted to varying degrees.

Bushes covered much of the land, and some tracts of timber remained. The Swiss cleared part of the timberland to provide lumber for building and to furnish some new productive land for crops. Rehabilitation of the remaining land was begun immediately. Gullies were filled with bushes, branches, and pieces of timber. By methods of plowing and filling-in of earth they were finally erased. In some instances, the fertile soil that had washed to the lower parts of depressions or sink holes was actually spaded out, loaded on wagons, and hauled back onto the slopes, which had been cleared of their tangle of growth

A more important method of rehabilitating the land, however, was the application of all available stock manure. To obtain this in considerable quantities, various practices were used. Stock was frequently penned in and the floors covered with liberal quantities of absorbing litter. Straw was limited during the early years of the settlement; so the Old World practice was followed of gathering leaves in the forests for bedding. As much stock, mainly cattle, as possible was secured, and through their feeding and fattening good beef was produced where no good beef had been produced before. "Grass critters" were plentiful, but these did not supply *good* beef. The manure was systematically applied to field after field, and soon yields of corn doubled and trebled. Several of the older citizens recall that the average yield of corn was raised within a few years from less than 10 to over 30 bushels an acre.

The enterprising newcomers were aware that numerous sheds in the neighborhood were filled with the droppings of horses and mules. Shortly the natives enjoyed the free services of these immigrants in having their sheds cleared out and the manure hauled away. The industrious neighbors would even pay for doing this work, and this opportunity was not often denied.

Even so, the German-Swiss found the supply of stock manure inadequate for their increased holdings and large tillable fields. Experience and reading also led them to believe that manure failed to supply all the soil amendments required for maximum production and yields. Their experiments to cope with the problem were many and varied. The flexibility they demonstrated in this respect as well as in other programs played no small part in carrying them through the first critical years in their new home. Commercial fertilizers were still in a highly experimental stage, were not standardized, and were bought largely at the buyer's risk.

Kaserman and some of the other members of the community obtained all available ashes from various sawmills located within a reasonable distance. At these places sawdust and remnants of wood were reduced to ashes, and these ashes had been wasted. Applied to the land, they provided substances helpful to plant growth.

It was soon realized that the local soil was [illegible]id in its reaction and various steps were taken to correct this condition. Kaserman again seems to have been among the first to attack the problem in a practical way. Burnt lime was tried but the cost of applying it seemed considerable. Kaserman

felt or knew that raw limestone, if ground fine enough, would help the land. 62/ The difficulty was to get ground limestone at moderate cost. Temporarily limestone screenings were obtained from a rock crusher owned by a railroad at Sherwood (in the southeastern part of the county, across the plateau). In the late 1870's, the first limestone crusher was brought to the community, and from that time the problem of obtaining ground stone was simplified. Numerous stone crushers and grinders have operated in the community since then.

During the latter part of the nineteenth century, the Great Plains were combed for countless bleaching buffalo bones. Ground up, these were reputed to be excellent fertilizer. The German-Swiss, who read farm publications regularly, became interested. Carloads of bones were shipped into the community, ground up, and applied to the land. Cooperative purchase of fertilizer, as well as other needed supplies, was established at an early time, and by this system much money was saved. Beginning in the 1870's and 1880's, commercial fertilizers were also experimented with and their use in varying quantities has continued.

62/ The use of calcareous materials, particularly of marl and chalk, dates back to the time of the Romans and even pre-Roman times. According to Seebohm the practice of marling and chalking land was understood in southern England before the Romans came to that section. See his *The Evolution of the English Farm*, p. 77. It seems, however, that the Romans left the first literature advocating the use of marl on land. See Milton Whitney, *Soil and Civilization*, pp. 216-54. In England and North Central Europe the use of this substance on land seems to have been highly irregular until one, two, and three centuries ago. See Lord Ernle, *English Farming, Past and Present*, pp. 10, 107, 109, 369; J. Wimmer, *Geschichte des Deutschen Bodens mit seinem Pflanzen und Tierleben*, p. 62; J. G. Elsner, *Die Deutsche Landwirtschaft, nach ihrem jetzigen Stande dargestelt*, pp. 123-28.

During the early colonial period of this country the use of marl and chalk was completely neglected. George Washington, who was constantly in touch with the agricultural leaders of England, carried on some experiments with marl as early as 1760. His experiments were not very successful. See Paul Leland Haworth, *George Washington, Country Gentleman*, pp. 92-93. The Germans around Philadelphia seem to have been among the first farmers in this country to use some form of calcareous material on land. There these substances were already used very generally by the time of the Revolutionary War. See Percy Wells Bidwell and John I. Falconer, *History of Agriculture in the Northern United States, 1620-1860*, pp. 88-89. In Virginia the adoption of calcareous manures largely dates back to the work of Edmund Ruffin. Craven writes that because of Ruffin's work, "marl changed despair into promise and success in the Old South" from 1820 to 1845. See Avery O. Craven, *Edmund Ruffin, Southerner*, p. 55; also Ruffin's *An Essay on Calcareous Manures*.

It is extremely difficult to generalize on the widespread adoption of calcareous manures in the South generally. In Franklin County the German-Swiss were the first to adopt the practice of liming the soil. Although some non-German-Swiss soon began to imitate the newcomers in this practice, others were very slow to begin the practice. Few had adopted it by 1900. In fact, much land in the county still receives an inadequate quantity of lime.

Machine Innovations.

In the country of their origin, the German-Swiss had been conditioned to a detailed, small-scale, painstaking form of agriculture, carried on with few and simple tools. In the northern part of this country, however, where many had lived, farming was conducted on a comparatively large scale because of the relative abundance of land and because many labor-saving farm machines were being perfected. Thus many of the newcomers had already used steel plows, seeders, and reapers. They had seen or used improved threshing machines, mowers, and better corn planting and cultivating devices, which came into general use after the Civil War.[63]

In Franklin County, none of these improved implements had been introduced when the first German-Swiss arrived. Almost without exception the new devices were introduced by these immigrants. John Kaserman was the first in the county to use a chilled steel plow. He and other German-Swiss introduced the reaper, binder, grain drill, horse rake, 2-row cultivator, windmill, manure spreader, and cream separator. The use of the steel plow at first occasioned much speculation among the natives. Most of them were convinced that the headstrong Kaserman, who insisted on doing everything the wrong way, would ruin his land for years to come.

Apparently the first windmills were introduced by the German-Swiss during the 1880's. Soon after, this device came into general use in the community. These structures excited no end of comment and admiration among those passing through the Belvidere community. A salesman covering much of the South remarked that he had seen more windmills around Belvidere than in the rest of the country from the Atlantic (south) to the Mississippi River. Now the windmills are being replaced by the more reliable electric motors.

Generally speaking, the German-Swiss followed a northern and mid-western pattern of farming in Franklin County. Aside from illustrations already submitted, this tendency is confirmed by the erection of a cooperative creamery in Belvidere in 1892. Residents claim that this was the first cooperative creamery built south of the Ohio River, and in this claim they may well be correct.[64]

As usual with early creameries, the equipment in the cooperative creamery in Belvidere included a large power-driven separator. Patrons of the plant were required each day to haul their milk to the plant to be separated; skimmed milk was returned to the farm and used as stock feed. In unspecialized dairying sections the daily trip to the creamery consumed an inordinate amount of time, and some patrons contributed milk only during certain seasons

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63/ Better plows were generally introduced in the North from 1820 forward; reapers were introduced in wheat-growing sections in the late 1840's and 1850's; mowers and better implements for planting and cultivating corn were rapidly adopted during and after the Civil War. See Bidwell and Falconer op. cit., for excellent accounts of the development and introduction of farm machinery.

64/ During the East Tennessee Farmers' Convention in 1894 (May 22 and 23) it was reported that cooperative creameries had been built at Sweetwater, Concord, Mossy Creek, and Maryville. *Biennial Report of the Bureau of Agriculture, 1893-94*, p. 23. It is not made clear whether this statement applies to all of Tennessee or merely to east Tennessee, nor is any statement made of the exact time these creameries were erected.

or even ceased to be patrons. This and other grievances led to many failures of early creameries wherever they were introduced in general farming areas,[65] and the creamery erected in Belvidere did not escape this fate. Another creamery was erected in Winchester in 1915, and this plant finds its best producers of butterfat among the German-Swiss (table 19).

Crop Innovations

Of unusual significance are the accomplishments of the German-Swiss in the production of legumes, particularly red clover, crimson clover, and alfalfa. Although red clover had long been grown in various sections of the South, it did not play an important part in the rotation scheme. The German-Swiss are credited with emphasizing it more than was customary in this section. The benefits were reflected both in increased fertility of the land and in better-fed stock.

Pioneer work was done by the German-Swiss in the growing of alfalfa in Tennessee and the South. Alfalfa, a lime-loving plant, is grown extensively in semiarid areas and under irrigation.[66] In the acid soils of eastern and southern States, its production is accomplished only with some difficulty and special care. In these soils a liberal application of lime is essential to the growth of this plant. No alfalfa had been grown in Franklin County before the German-Swiss came and apparently none had been grown in Tennessee.[67] In 1876, Kaserman, returning from a brief visit to Switzerland, brought in his traveling bag a small quantity of alfalfa seed. Experiments were made with the plant during the 1870's and 1880's, but it was not until about 1900 that the problems of seed-bed preparation and inoculation of the soil had been mastered. Since that time the plant has become well established in the community and has had an important part in the farming program of the German-Swiss. Today the heaviest concentration of alfalfa-growing in Franklin County is centered in this community.[68]

Another German-Swiss, the late John Ruch, is referred to in Franklin County as "the father of crimson clover". The county now enjoys the reputation of being the foremost county in the United States in the production of crimson cloverseed.[69] This clover is the most important winter annual legume of the central section of the Eastern States. It provides excellent fall,

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65/ See Walter Kollmorgen's *The Butter Industry of Nebraska*, pp. 23-24. Much of the blame for the failures of creameries must be laid to the manufacturers and salesmen of creamery equipment. The selling of creamery stock in sections that had few cows was in many instances purely a promotional scheme.

66/ Alfalfa, although known in colonial times, really spread eastward from California after it had been introduced in that State from South America. See J. F. Cox and C. R. Megee, *Alfalfa*, p. 27.

67/ In 1894 (May 22-23) Robert W. Parker of Knox County exhibited some alfalfa at the East Tennessee Farmers' Convention. In referring to the plant the *Biennial Report of the Bureau of Agriculture, 1893-94*, states (p. 22): "This being a new plant, created considerable interest among the delegates." The report goes on to say that Mr Parker planted his first crop in 1890.

68/ See p. 85, below.

69/ No definite statistics have been found to confirm the claim of local publishers and citizens that the county leads in crimson cloverseed production. Census data are not determining since crimson clover is not listed as distinct from other clovers. However, *Leaflet No. 160* of the U. S. Department of Agriculture (June 1938) states that most of the domestic crimson cloverseed offered on the market is produced in south-central Tennessee (p. 4). In Tennessee, Franklin County easily leads all the counties in crimson cloverseed production. In turn it may be said that the Belvidere community easily leads the rest of Franklin County in the production of this seed.

winter, and spring pasture; provides an excellent hay when cut at an early bloom stage; is an excellent cover crop; provides green manure for soil improvement; is adapted to cool, humid weather and is tolerant of mild winter conditions; and it thrives on both sandy and clay soils and is tolerant of moderate soil acidity.

The first crimson cloverseed planted in Franklin County was sent by Robert Essary, State Commission of Agriculture, to John Ruch in 1892 at the suggestion of J. B. Killebrew, who was at that time Industrial and Immigration Agent of the Nashville, Chattanooga & St. Louis Railroad. The first venture was fairly successful but the crop was soon discontinued. Ten years later, Lee Ruch, a son of John Ruch, planted another half-bushel of crimson clover. The present industry has sprung largely from this venture.

Until the period of the World War nearly all the crimson cloverseed used in this country was imported from France and Hungary. During the World War, importation of seed was interrupted and Franklin County responded promptly to the stimulus of high prices for seed. During recent years this country has again imported about 60 percent of the crimson cloverseed used, most of it again coming from France and Hungary. In domestic production, however, Franklin County retains the foremost position.

Cooperation

Much of the success of the German-Swiss community must be attributed to a cooperative spirit and to cooperative ventures. Sociologists will hold, no doubt, that such cooperation is readily demonstrated in a group which in mode of life and language is conspicuously set apart from its neighbors. Farm materials and needs were frequently bought in quantities to effect considerable savings. Fertilizer, seed, and binder twine especially were obtained in this way.

Several specific examples of cooperation illustrate that the German-Swiss prospered and that they were progressive. In 1916, the County Commissioners of Franklin County proposed to build a hard-surfaced road, 8 feet wide, from Belvidere to Winchester, a distance of about 7 miles. Citizens of the Belvidere community objected and asked that the road be built 16 feet wide. The Commissioners insisted that a width of 8 feet was adequate and prepared so to build it. Promptly the residents of the Belvidere community volunteered enough money to build a 16-foot road. During the same year, the Franklin County Farmers Mutual Fire Insurance Company of Belvidere, Tennessee, was formed. Farmers who are deemed good risks may join by paying a small membership fee, and all losses are met by an assessment plan. The venture is considered highly successful, and by the summer of 1938 nearly a million dollars worth of farm buildings had been insured in all parts of the County.

The Belvidere community was one of the first, if not the first, rural community in the South to receive electricity. As early as 1921, a power line was built from Winchester to Belvidere - a small trading and church center with about 12 houses - and some nearby farms. Later the line was extended so that many of the people in the community had electricity before the advent of the Tennessee Valley Authority and its rural systems. 70/

70/ See p. 68.

Social Opportunities.

Rural sociologists give much emphasis to the need of adequate social opportunities in rural communities. Just what part such opportunities play in the success of a farming community may be somewhat controversial, but the fact remains that man is a social being and that his associations play a significant and frequently a determining part in his activities. The focal point of nearly all social as well as religious activities of the German-Swiss community has been the Evangelical and Reformed Church at Belvidere. [71] Besides carrying on religious and church endeavor work, the church sponsors numerous social functions and provides opportunities for certain athletic activities, such as tennis and croquet. [72] The significance of these opportunities lies in the fact that they maintain community integrity, provide a rounded life for the people, young and old, and indirectly perpetuate certain values and patterns of life that make for thorough farming. Certainly these opportunities have played a part in keeping many promising young people in the community, to become substantial farmers. No doubt they also helped to perpetuate a spirit of neighborliness and cooperation which is apparent to outsiders who know the community. A number of leading citizens of Winchester could not recall any misdemeanor or court cases in which German-Swiss had a part, whereas such cases are common in other sections of the county.

The German-Swiss Women

No account of a successful farming community would be complete without recognition of the part women have played. Particularly is this true of immigrant communities in which means are very limited and a beginning has to be made, frequently through sheer drudgery, and constant, exhausting application. The German-Swiss women were conditioned by a pattern of household activities which has enabled them to function more effectively in their new home than the native women. The industry, thrift, and varied activities of the men outside the house were matched by the women in house and garden. From the first, these people have maintained large, well-kept gardens, producing a great variety of vegetables and foods. Gardens are replanted several times through the summer and they yield vegetables until the frosts come. Greens are maintained through the winter and many root crops are stored in the large cellars. Dairy products are produced abundantly and used in greater quantities and varieties than among the natives. Cornmeal has never been important in the food program of the people, nor has the frying pan played the all-important part so characteristic of the frontier and the South. [73] From wheat flour they prepare a much greater variety of baked goods than do the natives. They

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71/ Not all of the German-Swiss are members of the Evangelical and Reformed Church, but most of them are.

72/ At the time of the survey, May 1938, nearly every member of the community was a member of one or more of the following active organizations: Men's Churchmen's League, Women's Missionary Society, Girl's Missionary Guild, Christian Endeavor Society, Junior Christian Endeavor Society, Women's Community Club (non-church), Women's Christian Temperance Union (non-church), and various athletic groups.

73/ See Vance, *Human Geography of the South*, pp. 412-41.

maintain larger poultry flocks and use and sell more eggs and fowl. They use beef in greater quantities, and prepare meats in a variety of ways. Needle work and sewing occupied time that might otherwise have been idle with consequent savings in clothing.

It should not be assumed that the natives of the area have uniformly had a lower standard of living than the German-Swiss. A few of them have equaled and perhaps even excelled the newcomers in some of the above practices, but by and large they are the exceptions. The explanation lies in the heritage of the frontier and the past.

An observation by a citizen in Winchester provides an illustration of the dissimilar eating habits of the German Swiss and some of the native families. Children from the Belvidere community attend the high school in Winchester, which is also attended by children from other sections of the county. The observer noted (a number of years ago) that the former children grouped together during the lunch hour to eat and that the other children formed their own groups. The first group had an amazing variety of food items: sandwiches (prepared with a variety of meats, cheeses, spreads, jams, or jellies), a variety of cookies, cakes, pies, or other desserts -- and fruits. In one of the other groups the fare consisted of cold corn bread soaked with molasses, fried pork, and (perhaps) some dried fruit; in season, these children usually had fresh apples and nuts.

The significance of this bit of observation can hardly be overestimated. That malnutrition is related to energy seems a reasonable assumption. Campbell and Vance both speculate on the possibility that the limitations of diet may be related to the general use of snuff, tobacco, and perhaps liquor.[74/] General observation readily discloses the fact that on the whole the German-Swiss are well fed and physically well preserved. The use of snuff and alcohol among them is limited. In common with most rural people, they do eat fried food, but it is well supplemented with other foods. Moreover, they patronize dentists and physicians more generally than do many other rural people in the State. To one familiar with the rural South, these considerations are important.

Enterprise and Diseases

A study of the relative efficiency of Southern farmers cannot ignore what Vance calls "geography of disease." Temperature, moisture, and soil conditions are important factors in the perpetuation of certain disease germs and parasites, and the prevalence of certain diseases must express itself in physical efficiency. The four serious diseases that have definitely had influence in conditioning activities in various parts of the South are pellagra, malaria, hookworm, and Ascaris infection. Unfortunately, little precise information is available on the effect these diseases have had in the development of Franklin County. Even now the county has no health department which might serve as a clearing house for information.

74/ See Campbell, *The Southern Highlander and His Homeland*, pp. 201-4; Vance, op. cit. Chap. XVI, "The Geography of Diet", pp. 411-41. J. Russell Smith also speculates on the significance of the abused frying pan. See his *North America*, p. 261, fn. Walter Hines Page of North Carolina crusaded for years against the frying pan. See Vance, op. cit., p. 429.

Pellagra, as a diet-deficiency disease, is clearly limited to the poorer elements of the South — the element largely given to a diet of meat, meal, and molasses. [75] This suggests at once that the German-Swiss have not been affected by this disease. In general living standards in Franklin County are considerably higher than in the deeper South, and it is questionable that pellagra has ever been a problem in the county. But this does not mean that malnutrition does not exist or has not existed in the past.

With reference to malaria, two important facts must be remembered: (1) this disease was much more prevalent in the past than it is now, and, (2) it is a more serious problem today in the deeper South than on the margins of the South. Doctors and laymen agree that malaria was once more common in Franklin County than it is now. Morbidity statistics for the county since 1931 report from 18 to 87 cases per year. [76] This, however, represents but a fraction of the cases that occur each year. At present, treatment is generally begun promptly and so the disease with its energy-sapping tendencies is checked. This prompt recourse to medical treatment was not typical in the past.

As some of the German-Swiss live adjacent to two of the largest swamps in the county, it might appear that they would be permanent victims of malaria. The fact is that these farmers are among the most energetic and most enterprising people in the community. None recalled that they had ever had malaria. A few of the German-Swiss have had "chills", but they promptly visited a doctor and took quinine. That these people have promptly sought medical aid when needed is significant. Until recently some of the more backward people in the control areas still believed that malaria is induced by, or is "caught" from, "night air", particularly in low places. Nothing was done about the chills and the disease took its toll in energy and lives. In general, however, malaria is not a serious problem in Franklin County. A recent report of the Tennessee Department of Public Health says that this disease is chiefly confined to the low-lying areas of the western part of the State. [77]

The hookworm and the parasite known as Ascaris (large round worm) must share part of the blame for a retarded South. [78] High worm infestation greatly reduces the working efficiency of the human host. On the large haciendas of Puerto Rico, for example, it was found that in some instances hookworms reduced the efficiency of workers from 35 to 50 percent. [79] Intelligence and achievement likewise may be greatly impaired. [80] Although the Ascaris does not produce so severe symptoms as a heavy hookworm infestation, it retards efficiency.

Both the hookworm and the Ascaris are evidence of a lack of proper disposal of human excreta. In the rural South, this infestation results most generally from the absence of privies and from the practice of walking

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75/ See Vance, op. cit., pp. 436-41.

76/ According to a letter from Dr. Henry E. Meleney, Vanderbilt University, September 29, 1938.

77/ See report for 1929-31, p. 106.

78/ See Vance, op. cit., pp. 380-90.

79/ *Second Annual Report of the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease* (1911), p. 12.

80/ Vance, op. cit., p. 390.

barefooted.[81] In recognition of this fact, the Rockefeller Sanitary Commission for the Eradication of Hookworm Disease made a preliminary sanitation survey of 125 counties in the South before making its report of 1911. The survey was based on privy conditions, which, in turn, suggested degree of soil pollution. All privy types in use were classified as "A", "B", "C", "D", "E", and "F", and to each was assigned a rating of efficiency on a scale of 100.[82] The survey covered 228 farms in Franklin County and on the basis of this work gave it a sanitary index of 4.8 percent, an index typical of all the counties surveyed in the South.[83] A later examination of 210 persons in Franklin County found that 32.8 percent of them were infected with hookworm.[84]

As Franklin County lies partly on the Cumberland Plateau where the soils are sandy and hence suitable for hookworm, a distinction no doubt existed in the incidence of this infection.[85] Infestation in the fine-textured soils which prevail in the areas studied is no doubt considerably lower than on the plateau. Moreover, it is not probable that the average "worm load" per person was high enough to result in a serious or even perceptible health or efficiency problem.[86]

The extent of hookworm infestation among the German-Swiss in Franklin County can merely be surmised from general observations and inquiries. When a cultural pattern prevents promiscuous soil pollution, the ground is not infected with larvae and consequently the inhabitants are less likely to become diseased. The German-Swiss have had toilet facilities since their arrival in the South and have always had the habit of wearing shoes. Infection was thus largely prevented. Some infection may have taken place in barefoot children, but no case has ever developed in the community, according to the testimony of numerous people interviewed.

81/ The problem of paucity of privies in the South has received much attention from the Civil Works Administration, the Emergency Relief Administration, the Works Progress Administration, and the Public Health Service. According to a personal communication from the U. S. Public Health Service, Nashville, Tennessee, March 3, 1939, a total of 170,808 privies were built in Tennessee between December 1, 1933, and February 25, 1939, with the aid of these agencies. Nearly 1,600 of these were built in Franklin County (1,553 from December 1, 1933, to November 19, 1938). But there are still numerous small trading centers in isolated sections of the State where as much as half the populace is without toilet facilities.

82/ See *Second Annual Report,* pp. 24-25.

83/ The number of privies of various types found in Franklin County was as follows: D, 1; E, 106; F, 121; total, 228. See *Third Annual Report* (1912), p. 86.

84/ Ibid., p. 86.

85/ Surveys have shown a striking correlation between soil texture and the incidence of hookworm. In Tennessee it was found that infestation was considerably greater in the sandy soils of the Cumberland Plateau and Unaka Mountains than in fine-textured soils of the State. See *Biennial Report of the Department of Public Health, 1926-27,* State of Tennessee, pp. 46-48.

86/ W. G. Smillie, "Intensity Surveys of Hookworm Infestation". De Lamar Lectures, 1925-26, arranged by Johns Hopkins University School of Hygiene and Public Health (1927), p. 94.

Use of Relief Measures.

"Relief loads" in rural areas during the recent depression are of interest with reference to general farming conditions. It may be assumed that some maladjustment exists in places where relief requirements have been great and persistent, and that in the absence of this need conditions are relatively better.

The relief problem has been relatively less severe in Franklin County than in much of the South. With a population of 21,796 in 1930 (white, 19,263; Negro, 2,533), of which 5,320, or 24 percent, lived in towns and villages, about 1,100 families were on relief in 1933, 800 in 1934, 600 in 1935, and 485 in 1936.[87/] It is estimated that slightly more than half of these relief clients lived in strictly rural areas.

None of the German-Swiss were on relief. Moreover, they provided for their hired help, many of them Negro families, although some of the seasonal help that finds some work among the German-Swiss did receive outside aid.

Introduction and Perpetuation of Techniques and Patterns.

The nature of the adjustment of the German-Swiss suggests that certain aims and objectives were more determining in the pattern they evolved than the aggregate of techniques that they acquired abroad and in the North. Thus, the maintenance of fertility by the application of manure and the use of legumes and rotation remained fixed, but the precise way in which this was accomplished changed considerably. The first legume that was grown successfully was red clover. After a lapse of several decades, the growing of alfalfa was mastered. Still later, crimson clover, lespedeza, peas, and soybeans were adopted in varying degrees. The successful adoption of bluegrass, white Dutch clover, timothy, and other crops also mark stages in the adjustment of these people to their new home. Crop patterns have been altered from time to time to gain desired objectives. These adjustments suggest that the German-Swiss have retained a wholesome and desirable degree of flexibility in their farming practices and, by contrast with the control groups, this flexibility has been much more pronounced than it has been among the traditional farmers in the section.

Observations on numerous "cultural-agricultural islands" in the South and elsewhere suggest that a transplanted group usually finds it essential to make numerous changes in patterns of living, particularly in farming. The nature of the change in the environment must, of course, partly determine the extent of the change in techniques if the adaptation is to be successful. If prevailing methods are interpreted to be satisfactory or successful, imitation by the immigrant may be anticipated in a marked degree. If prevailing methods are obviously defective, the immigrant may well utilize methods and techniques with which he is familiar and which promise success or improvements. It is,

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87/ Herman Ray, *An Economic, Educational, and Social Survey of Franklin County, Tennessee*, M. A. Thesis, University of Tennessee, 1937, p. 69. (Unpublished)

therefore, natural that the German-Swiss coming to Franklin County should have introduced improved farm practices with which they were familiar. That they have maintained a degree of flexibility uncommon to the traditional farmers seems to call for further explanation.

The German-Swiss have from the first been regular readers of agricultural journals. Several of the older people recalled the time when they often walked several miles to a neighbor's house, after a hard day's work, to get some copies of a farm publication. Many of these journals, published in the German language, came from the northern States where German-speaking people were numerous. Consequently they were largely concerned with the general, diversified farming problems and practices of the North. Then many of these people corresponded with and visited farming relatives in the North. It follows that the diversified farming practices with which they were familiar because of their foreign or northern background were encouraged and perpetuated by contact with the North. This situation made it natural that the agricultural history of this community should run almost parallel with the agricultural history of the North Central States. This is well demonstrated by the prompt adoption of improved farm machinery.

These contacts and associations stood in rather marked contrast to the associations of the traditional farmers in the county. Their friends and relatives, if scattered, were mostly in other parts of the South, where farming methods were not unlike those practiced in Franklin County. Even more important were the prevailing practices and attitudes with regard to reading farm journals. Many of the traditional farmers read with difficulty, in the decades preceding and following the Civil War. Those not so limited were not given to the reading of farm journals. As a matter of fact, a gentleman farmer is said to have informed his German-Swiss neighbor (in the 1870's) that farm subjects were not fit for publication in magazines and certainly were not appropriate reading material for a gentleman. Political questions, on the other hand, were followed rather closely; those who read devoted this time to politics. In general, the gentlemen farmers did not admit that a publisher of a farm journal might know more about farming than they. Even today the German-Swiss are much more inclined than the control groups to translate into practice good suggestions concerning improved farming methods from whatever source they come.

The fact that these German-Swiss have always as a group maintained superior agricultural techniques raises a number of questions concerning the permanence of a complex of patterns which rests largely on a foreign background. Of particular importance seems the matter of transmitting practices from one generation to the next. Moreover, if some blending of practices is apparent, how soon will obtrusive differences be erased?

It need hardly be said that the German-Swiss employ no conscious techniques to transmit the practices and ideals from one generation to the next. But they have a keen sense of accomplishment. They know that the traditional farmers have found it necessary, at least in part, to emulate the practices they introduced. This sense of pride plus the desire to live on an accustomed high plane is an inducement for the children to maintain superior farming practices. No doubt the conditioning of the younger generation involves subtle processes, the exploration of which belongs to the fields of psychology and sociology.

At present, the small number of German-Swiss in the community who remember their foreign and northern background probably help to perpetuate certain values and practices. When these individuals disappear and association with the North ceases, the blending process may be facilitated. Already the language barrier has disappeared and intermarriage with the natives is becoming more common. A consolidated high school in Winchester is daily throwing into close contact young people from a large section of the county. This will facilitate an even greater amount of intermarriage. What impact this will bring to bear on farming practices remains to be seen. Observations on a great number of other cultural islands in the South suggest that the size of such communities is closely related to the cultural-blending process. The larger the group and the more stable its focal points, the more permanent the cultural imprint. Thus large colonial settlements of Germans in South Carolina, North Carolina, Virginia, and Pennsylvania and an early postcolonial settlement in eastern Tennessee still reflect distinct cultural imprints.

Some Observations of an Earlier Student.

Before proceeding with this report, it seems worthwhile to call attention to a paper read by the late J. B. Killebrew before the East Tennessee Farmers' Convention in 1894 (May 23),[88] on "Clover and the Principal Grasses, Their Value and Influence in Attracting Immigration and Binding Us to Our Homes".[89] In this paper, there are several references to the German-Swiss and some descriptive material pertinent to this study. Mr. Killebrew believed that Bermuda grass was of great importance to the cotton States and that its value was not appreciated, either for grazing or as a means to heal gullies. He writes:

> "I saw it a few days since growing in great vigor at Belvidere, in Franklin County, and Mr. Kaserman, upon whose farm I saw it, prizes it very highly for pasture. It is difficult to eradicate, but is all the more valuable for grazing purposes on that account."[90]

Mr. Killebrew also advocated a much wider use of clover, and again he refers to the German-Swiss farming methods as an example. He writes:

> "Clover is the *open sesame* that unlocks the wealth of our soils, turns barrenness into fertility, deformity into beauty, poverty into comfort and affluence.
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> "If any object lesson should be wanting, one may be seen in Belvidere, Franklin County, Tennessee. Twenty years ago a few Germans and Swiss bought, near Winchester, some old fields that were utterly sterilized and abandoned. The red rims of the

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88/ Mr. Killebrew was for many years commissioner of agriculture in the State and later served as Industrial and Immigration Agent for the N.C. and St.L. Railway.

89/ *Biennial Report of the Bureau of Agriculture*, 1893-94, pp. 45-54.

90/ Killebrew in the Biennial Report, op. cit., p. 48.

> hills had, like inevitable fate, crept down every year more and more towards the basins. A more unsightly picture could scarcely be imagined. It had the appearance of having been stricken by fire and desolated. The crops grown in the small basins were not sufficient to support the former owners, and they sold out—sold out to these settlers at prices varying from four to fifteen dollars per acre. The first work performed by these new citizens was to stop the gullies. Then they gathered the rich washings from the bottoms and spread them over the slopes. Clover was sown and nourished by applications from the compost heaps made of ashes, rich dirt, soapsuds, stable manure, rotten straw, and everything of a vegetable or animal nature that could be collected. Some of the limestone layers in the vicinity were ground into dust and applied to the land. After a long continued toil and patience and careful attention, a clover stand was obtained. From that period on to the present time Belvidere has been one of the thriftiest, if not the most thrifty, agricultural communities in the South. These people found a desert; they have converted it into an Eden. Lands that twenty years ago would not yield four bushels of wheat per acre are now producing twenty-five to forty bushels, and a like increase in all the other standard crops. I repeat, there is not in all the South a spot more lovely or attractive than Belvidere. Its farm houses are tasteful, neat and comfortable; its fields are models of high culture; its orchards are filled with the choicest fruits; its vineyards hang in season with purple vintages and golden clusters. Schoolhouses and churches, architecturally simple, but neat and appropriate, are seen on every hand."[91/]

As Commissioner of Agriculture in Tennessee and as Industrial and Immigration Agent for the N. C. and St. L. Railroad, Mr. Killebrew was greatly interested in promoting the settlement of farmer immigrants in Tennessee. A good deal of advertising was done to attract prospective land-buyers, and he personally accompanied some of these potential buyers to available tracts of land. He took several to Franklin County, for he believed that other immigrants might profit by the example set by the German-Swiss and that immigrants were more likely to be satisfied and to remain if there were people with similar backgrounds in the community.

Because of the ineffective methods of farming that prevailed in the State, Mr. Killebrew had difficulty in convincing prospective buyers that the soil had potentialities. So he recommended many changes and improvements. In the same paper in which he spoke of the German-Swiss, he had this to say:

91/ Killebrew, op. cit., pp. 48-9.

"Nothing strikes a traveler so unfavorably as worn-out old fields, dilapidated houses, rotting fences, dragging gates, cattle browsing on shrubs where the hand of taste should plant flowers or sow grass. Oftentimes one sees noxious weeds and brambles and thorns growing where luxuriant meadows would gratify the eye by their rich verdure. A few dollars spent in beautifying a home with grass and flowers and shade trees will double its selling value, bind your children to it, attract persons of taste, industry and culture and build up a durable prosperity.

"I was forcibly impressed, a short while since, with the repellent effects of the reverse of this picture. A very intelligent man from the North came to this State in search of a home. He asked me to accompany him to a certain county. Many of the farms in that county are in a high state of cultivation, and with these the visitor was wonderfully impressed, especially with the luxuriant growth of clover and timothy. Soon we reached another neighborhood, where the farmers were shiftless and cared nothing for beauty on their farms. This neighborhood was filled with a class that never sows clover or any of the grasses, never stops a gully, never cleans out a fence row, never cultivates the crops well, a class that is negligent of everything, except what may be sold in market. As we passed through this region--one, I may add, devoted to cotton exclusively--large piles of barn-yard manure were seen lying out in front of the stable; tools were left standing exposed to the weather; a few lean cattle were seen nipping the scanty herbage that grew along the roadsides; the bare fields were relieved by no meadows, no pastures, no green lawns, no verduous yards. The appearance of everything was repellent to a cultivated mind, and acted like a nightmare upon the visitor. Here poverty lurked in the atmosphere; beauty had deserted the place; want lingered upon the threshold; contentment had taken wings and flown away. The stranger hastened from its presence."[92/]

A Comparison of the Farming Program of the German-Swiss and Three Control Groups in Franklin County, 1929-30

1. GENERAL FARM STATUS AND PRACTICES

Selection of Farm Schedules.

The purpose of this portion of the report is to compare the farming operations of the German-Swiss (and their direct male descendants) with that of native or traditional white farmers in Franklin County who occupy soils that have the same potentialities. Agricultural schedules in the Bureau of the Census, on which most of the data here presented are based, were selected rather carefully, in order to obtain data as representative as possible of the farm families in the respective groups.

92/ Killebrew, op. cit., p. 53.

For practical reasons minor civil divisions or districts were selected for comparison, and the absence of villages and cities was one of the governing factors in this selection. The German-Swiss live largely in district 5 (35 out of 39 schedules listed) With certain omissions, explained below, the remaining white farmers in this same district constitute control group 1. District 4 represents control group 2, and district 9, control group 3. Each of these districts, however, has one or more small trading centers, the largest of which is Huntland, with a population of 247 in 1930 (fig. 3). No population data are available for the small communities of Belvidere and Alto. A few buildings on a crossroad make up the hamlet of Alto. The presence of these trading centers gives rise to part-time farming. In the German-Swiss community a number are merely part-time farmers and their farm income is rather limited. As the total number of farm schedules for these people is fairly small, averages for the group are readily modified by even a limited number of sharp departures from what may be considered standard practices and average incomes. Therefore, all schedules of farmers who worked 100 days or more off the farm for pay were laid aside (table 7).

Agricultural data are presented by tenure groups, that is, full-owners, part-owners, croppers, and other tenants (the latter not cash tenants). The tenure code on the original schedules also lists "cash tenants", a type of tenure very common in some sections of the country In 1929-30 there were only five cash tenants in district 4 and two in district 9; so the schedules for cash tenants were laid aside.

A limited number of farm operators barely exceeded the minimum requirements in acreage to have their places considered as farms, according to the definition of the Bureau of the Census; [93/] still, the farm income reported far exceeded the average for the district or the county. The schedules also showed that these operators had bought and sold hundreds of head of stock, but had bought little if any feed. As it was apparent that they were primarily stock-dealers and that their income did not reflect farming activity, their schedules were laid aside.

In a further attempt to get all fractional farmers out of the picture, particularly those living in and near trading centers, schedules were laid aside for operators who farmed two acres or less and reported no cotton or corn on this limited acreage The greatest number of schedules of this kind (17) was found in district 4 presumably the operators lived near Huntland, the largest trading center in the districts studied.

The farm schedule of the fifteenth census (1930) is divided into 17 parts and lists 233 questions. Many of these questions provide for several entries As may be expected, [illegible] enumerators make a perfect record in filling out as many as several hundred schedules and not every farmer is willing to give all the information asked for, particularly on income or value of products sold. In this study, information on income or value of products sold -- was considered important, and the few reports on which such information was not supplied were laid aside (Table 7).

93/ *Instructions to Enumerators (Population and Agriculture, 1930)* instructs the enumerator in part, as follows: "Do not report as a 'farm' any tract of land of less than 3 acres, unless agricultural products to the value of $250 or more were produced on such tract in 1929 " (Paragraph 298 p. 58.)

Table 7.--*Census schedules listed and omitted.*

District and selection group	Number of schedules
	Number
District 5:	
Schedules listed:	
German-Swiss (4 in other district)	35
Control group 1	84
Schedules laid aside:	
Worked 100 days or more off farm	15
No income listed for 1929	2
Negro schedules	26
Total number of schedules	162
District 4:	
Schedules listed:	
Control group 2	213
Schedules laid aside:	
Worked 100 days or more off farm	26
No income listed for 1929	10
Negro schedules	22
Cash renters	5
Stock traders	2
Two acres or less harvested in 1929, and no cotton or corn	17
Total number of schedules	295
District 9:	
Schedules listed:	
Control group 3	221
Schedules laid aside:	
Worked 100 days or more off farm	21
No income listed for 1929	1
Negro schedules	3
Cash Renters	2
Stock Traders	3
Otherwide irregular	2
Total number of schedules	253

Table 8.—*Number of schedules used, by tenure groups.*

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All groups
	Number	*Number*	*Number*	*Number*	*Number*
Island	27	4	3	5	39
Control group 1	46	9	11	18	84
Control group 2	72	25	63	53	213
Control group 3	71	49	55	46	221

Figures presented in table 8 represent a breakdown of schedules for the island and control groups according to tenure. These figures will not be repeated in terms of units (number reporting) but in terms of percentage reporting. Thus in table 16 the proportions of full-owners reporting expenditures for feed are as follows: island, 66 percent; control group 1, 81 percent; control group 2, 72 percent; and control group 3, 47 percent [94/] This means that of the 27 full-owners in the island, 18 reported expenditures for feed; for the control groups the numbers reporting are 37, 52, and 33. The advantages of this method are, of course, readily apparent. The prevalence of one practice or another is established at once and the number of schedules listed need not be repeated in connection with numerous tables. It should be noted that the numbers of schedules listed for part-owners, croppers, and other tenants are limited for the island and in part for control group 1, and that averages for these groups are, therefore, not particularly significant.

In keeping with the practice of the Bureau of the Census, no data are listed when fewer than three persons reported for a given item. When one or two persons reported certain items, the fact is indicated by an "x". The number reporting and amount reported, however, are included in the totals.

Years on Farm

Question 5 of the general farm schedule for the fifteenth census of the United States (1930) asked for the year and month "when you began to operate this farm". The years reported were subtracted from 1930 and then listed for the island and the three control groups (Table 9).

94/ No fractional part of percentages will be listed for percentage reporting.

Table 9.—*Average number of years on same farm for island and control groups* [1/]

Farm group	Full owners	Part owners	Croppers	Other tenants	Total
	Years	*Years*	*Years*	*Years*	*Years*
Island	18.2	15.5	3.3	7.6	15.4
Control group 1	18.6	13.5	3.0	2.4	13.4
Control group 2	12.9	7.6	1.7	2.2	6.3
Control group 3	14.0	12.0	1.5	4.3	8.5

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

No great discrepancy in average number of years on farm exists between the German-Swiss and the various control groups among full-owners. On the whole, the full-owners in control groups 2 and 3 are somewhat more mobile than those in the island and control group 1. A much greater discrepancy is shown by the other tenants' group as between the island farmers and the control farmers. The part-owners, croppers, and other tenants among the German-Swiss have operated their farms for longer average periods than the corresponding tenure groups in the control areas. The difference is probably traceable to the fact that, with two exceptions, all German-Swiss who are not full-owners, rent from relatives (Table 10). As the percentages of control farmers who rent from nonrelatives are higher, they show a greater tendency to move frequently. The total column, therefore, reflects greater mobility for the control areas, particularly 2 and 3, than for the island. It seems reasonable to expect this difference in mobility to be reflected in differences in farm values and even in farm practices.

Table 10 shows that there is a high percentage of landownership among the German-Swiss. Eighty percent of them are full- or part-owners, whereas for control groups 1, 2, and 3 the percentages are 65, 46, and 54. A total of about 95 percent of the German-Swiss own all or part of their land or rent from relatives For the three control groups the respective percentages are 80, 61, and 66 According to the census records, slightly over 42 percent of the farmers in Franklin County were tenants in 1930, and in 1935 slightly over 45 percent were tenants.

Land Use in Island and Control Groups in 1929

In proportion to total farm acreages, only slightly more cropland was harvested by the German-Swiss in 1929 than by the control groups, the difference with reference to control group 3 being only 1 percent (Table 11). Considerably more idle cropland was reported in control groups 2 and 3 than in the island and control group 1 The two former groups give more emphasis to cotton production than do the latter two. Moreover, they plant cover crops less generally and keep less stock. Together, these practices mean a great depletion of soil fertility and erosion.

Table 10.--*Extent of farm ownership and renting from relatives in island and control groups, April 1, 1930.* 1/

Farm group	Croppers		Other tenants			Percentage full- and part-owners	
	Percentage renting from --		Percentage renting from --			Total	--Plus tenants renting from relatives
	Relatives	Non-relatives	Relatives	Non-relatives	Unknown		
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Island	100	---	60	40	---	80	95 2/
Control group 1	73	27	22	67	11	65	80 2/
Control group 2	19	81	34	51	15	46	61 2/
Control group 3	22	78	26	63	11	54	66 2/

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ Schedules of other tenants that failed to report on "renting from relatives" were prorated according to percentages reporting in this tenure group.

When the percentage of idle land is added to the percentage of cropland harvested, no considerable difference exists among the groups in available acreages for crops. Moreover, when the percentage of plowable pasture is added to cropland harvested and idle cropland, there is no considerable difference in available improved land. The greatest difference exists between control group 2 (58 percent) and the island and control group 3 (both 66 percent). In part this is offset by the fact that control group 2 has a higher proportion of woodland pasture (12 percent) than any of the other groups.

As will also be shown later (table 38), the farmers in control group 2 received a greater income from lumbering activities in 1929 than did any of the other groups. For a number of reasons lumbering was unusually active in district 4 (control group 2) in 1929. This is pointed out merely to show that there was no marked difference among the various groups in available acreage, and that whatever difference did exist was mainly if not completely canceled with reference to gross income by the sale of lumber products. These considerations are important since all groups own some land on the plateau as well as barrens and swamp land that are mostly forested.

Table 11.--*Percentage distribution of farm land by use, island and control groups, 1929.* 1/

Census item	Percentage of total acreage 2/			
	Island	Control group 1	Control group 2	Control group 3
	Percent	*Percent*	*Percent*	*Percent*
7. Cropland harvested	49	43	38	48
9. Idle cropland	1	2	9	8
10. Plowable pasture	16	14	11	10
11. Woodland pasture	7	3	12	6
13. Woodland	20	33	22	22
Percentage of total acreage listed	93	95	92	94
7 and 9 combined	50	45	47	56
7, 9, and 10 combined	66	59	58	66

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ Percentage of total acreage listed does not equal 100 percent because census items 8, 12, and 14 under "farm acreage" were omitted since few entries appeared under them. These items were respectively: land from which no crop was harvested in 1929 because of crop failure or destruction; all other land used for pasture in 1929; all other land now in this farm.

Farm Acreages Reported

The German-Swiss farms are larger than the average farms in any of the control areas. Their size exceeds the average farm in control group 1 by 47 percent, and the average in control group 3 by 100 percent (Table 12). With one exception, each tenure group in the island has larger average holdings than corresponding tenure groups in the control areas. The one exception is found under other tenants, where control group 1 exceeds the island. The limited number of schedules available for operators other than full-owners among the German-Swiss vitiates to some extent the averages listed for these groups. Although the median number of acres reported by the various groups are generally smaller than the average number of acres reported, these figures confirm the fact that the farms in the island are larger (for every tenure group, according to medians) than those in the control areas.

Control group 1 represents the non-German-Swiss farmers in the same minor civil division in which most of the island farms are located. On the whole, this group occupies an intermediate position between averages for the island and control groups 2 and 3. The difference, it seems, may be attributed to a dispersion of farming practices followed by the German-Swiss. That there should have been some dispersion in district 5 seems logical, but that so little dispersion is discernible in district 4, which adjoins district 5 to the south, is difficult to understand.

Table 12.--*Average and median farm acreages, April 1, 1930, and cropland harvested, 1929, in island and control areas, by tenure groups.* 1/

Item and farm group	Full-owners	Part-owners		Croppers	Other tenants	All
		Owned	Rented			
	Acres	*Acres*		*Acres*	*Acres*	*Acres*
Total acreages:						
Average:						
Island	186	164	50	77	90	168
Control group 1	136	74	24	50	107	114
Control group 2	125	63	46	47	82	89
Control group 3	124	42	42	44	72	84
Median:						
Island	132	226		64	98	---
Control group 1	101	90		46	82	---
Control group 2	80	79		30	50	---
Control group 3	73	71		30	60	---
Acreage of cropland harvested:						
Average:						
Island	84	124		53	55	82
Control group 1	53	55		38	45	50
Control group 2	43	36		26	32	34
Control group 3	48	47		31	38	41
Median:						
Island	78	124		55	60	---
Control group 1	43	46		30	40	---
Control group 2	32	22		22	25	---
Control group 3	40	42		25	38	---

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

Slightly less than half of the farm land in the island and in the control groups was used for harvested crops in 1929. As the German-Swiss farms are about again as large as those in control groups 2 and 3, about twice as many acres are used for harvested crops. A distinction, however, is noted in the percentage of land harvested by the various tenure groups. Full-owners, part-owners, and other tenants generally harvested less than half their total acreages, while croppers generally harvested over half of their total acreages. Apparently, limited acreage is mainly responsible for this difference.

Farm Values, April 1, 1930

Just as the holdings of the German-Swiss are larger than those of the control groups, farm values for these people are higher. Tables 13 and 14 showing farm values reflect striking contrasts in farm development and, in part, practices. The average value of the land and buildings, for instance, ranges from about 100 to nearly 400 percent higher for the German-Swiss than for the various control groups. The range for the part-owners is even greater, reaching a differential as high as 6 to 1. The totals for all groups in general confirm the range in values shown by the full-owners.

The range in average value is not quite so great for buildings as for total value of farm and buildings, but the difference is equally striking. The range in the total column (table 13) is about 350 percent, and reaches almost 450 percent for croppers. Similar ranges are found in the value of dwelling houses and in the value of farm implements.

The fact that the farm holdings of the German-Swiss are larger than those in the control groups (table 12) makes it reasonable to expect more and perhaps better buildings on their places. But while the holdings in the island are from 47 to about 100 percent greater than average holdings in the control groups, the average values of land and buildings, of buildings, of dwelling houses, and of farm machinery are generally from 250 to 300 percent higher in the island than in the control groups. Even the land alone, independent of improvements (buildings), is valued from about 70 to 184 percent higher for the German-Swiss than for the control groups (table 14).

Table 13.—*Average and median farm values in island and control areas, by tenure groups, April 1, 1930,* [1/]

Item and farm group	Full-owners	Part-owners	Croppers	Other tenants	All
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Land and buildings					
Average					
Island	12,256	17,625	6,833	6,000	11,587
Control group 1	6,235	4,817	2,627	3,789	5,086
Control group 2	3,212	2,820	1,566	2,072	2,396
Control group 3	3,830	3,141	1,748	2,697	2,934
Median:					
Island	9,000	16,750	4,000	5,000	——
Control group 1	4,500	5,000	2,500	3,000	——
Control group 2	2,500	2,000	1,000	1,100	——
Control group 3	2,500	2,550	1,000	2,000	——
Buildings					
Average:					
Island	2,870	2,625	2,000	1,920	2,656
Control group 1	1,910	1,711	990	1,282	1,646
Control group 2	1,158	754	464	515	745
Control group 3	912	928	442	698	763
Median:					
Island	2,000	3,000	2,000	2,000	——
Control group 1	1,500	1,800	900	1,100	——
Control group 2	825	500	300	300	——
Control group 3	800	800	200	500	——
Dwelling houses					
Average					
Island	1,613	1,425	1,200	1,250	1,515
Control group 1	1,024	944	785	721	923
Control group 2	576	345	262	318	390
Control group 3	522	410	270	352	403
Median:					
Island	1,200	1,500	1,200	1,500	——
Control group 1	800	800	700	800	——
Control group 2	400	300	200	200	——
Control group 3	400	300	150	250	——
Farm implements					
Average:					
Island	961	1,450	530	410	907
Control group 1	497	511	132	396	433
Control group 2	284	227	177	128	207
Control group 3	259	254	103	222	228
Median:					
Island	800	1,250	450	500	——
Control group 1	400	400	100	300	——
Control group 2	112	125	75	50	——
Control group 3	200	200	20	200	——

1/ Computed from agricultural schedules, 1930 Census. Bureau of the Census

Table 14.--Total acreages and farm values and value per acre of land only April 1, 1930.--1/

Item	Unit	Island	Control group 1	Control group 2	Control group 3
Acreage in farms	Acres	6,570	9,601	19,008	18,590
Value of land and buildings	Dollars	451,900	427,250	510,310	646,100
Value of buildings		103,600	134,950	158,745	162,620
Value of land only		348,300	292,300	351,565	483,480
Value per acre, without buildings		53	30	18	26
Buildings, percentage of total value	Percent	23	32	31	25

1/ Computed from agricultural schedules Census of 1930, Bureau of the Census.

Reasons for the differences in farm values are many and varied but relate themselves to standards and practices prevailing in the various groups as described in previous chapters. From the start, the German-Swiss began to build up the land. The generous use of barnyard manure has always been important in their program. Legumes have always been planted freely. Cover crops have been planted for years -- long before the present advocacy of their use for soil conservation and crop reduction. When the Agricultural Adjustment Administration program for soil conservation was initiated, this group found that they had for years been following most of the conservation practices now advocated. Although they did not at first participate in the A.A.A. program, eventually they did. Commercial fertilizers have been used in varying quantities. Gullies have been filled and erosion has been checked in large part. Fields have been cultivated thoroughly with good equipment, and cultivated right up to the fences. Weed and brush patches have not been tolerated. It follows that the land has been built up to a higher production level than prevails in the control areas.

The striking difference between the island and control groups in the average value per acre of land is not due to soil advantages. As explained early in this report, physical areas as comparable as circumstances permitted were selected for this inquiry. Differences in soil fertility do exist, but soil types, in the sense that the soil surveyor uses the term, are very similar throughout the red limestone belt in the county in which live nearly all the farmers who are considered in this report. Unfortunately, no soil survey has been made of Franklin County. A number of soil experts were interviewed concerning the soils prevailing on the Highland Rim and, more particularly, with reference to the nature of the prevailing limestone soils. Soil maps and descriptions in the *Atlas of American Agriculture* were studied, as well as soil-survey bulletins. Personal impressions as to production potentialities were verified by competent individuals in the county and elsewhere

Little or no doubt remains that the prevailing types of soil in the limestone-sink hole area of the county belong largely to the Decatur and Dewey series.[95] Relief features are not pronounced in any of the farming sections considered (the plateau rises sharply above the Highland Rim formation, but very little farming is done on it) and are surprisingly uniform.

Decatur soils represent the red equivalent of the Hagerstown or brown limestone soils common to southeastern Pennsylvania, the Shenandoah Valley, and the central basins of Tennessee and Kentucky.[96] The limestone soils in the latter areas are well known for their high fertility and endurance, if properly used. They have a fine-grained skeleton, a strong body, a well-balanced respiratory and circulatory system, and a fair amount of colloidal material, particularly in the subsoils.[97] The most conspicuous difference between the Hagerstown and the Decatur soils is the color, the latter having a strikingly red or reddish color because of the development of iron oxides.[98] In other characteristics the soils are very similar, and with proper treatment the Decatur soils can be made to yield as well as the Hagerstown soils.[99] They are well suited for the production of grain, corn, grass, cotton, and various fruits. Bennett points out that the livestock industry might be developed much more fully on the Decatur soils, "since good forage crops, such as cowpeas, clover, vetch, soy beans, and alfalfa succeed."[100]

Bennett makes the further interesting observation that the Hagerstown soils in the more southerly parts of the valley (Folded Appalachians) do not yield so well as those farther north because "less attention is given to crop rotation and deep plowing."[101] This observation also holds true of the Decatur soils, which do not extend so far north as the Hagerstown series, and explains, in part, the findings of this study on the German-Swiss and the control groups. The former do diversify more and do plow deeper.

The Decatur soils, although developed from limestone, are acid and are deficient in phosphate, nitrates, and potash. The principal reason why the soils in the Central Basin of Tennessee (Hagerstown) are considered superior to the Decatur series on the Highland Rim is that the former are well supplied with phosphates. This advantage is frequently offset by the fact that they are rather shallow in places, overlying limestone formations at very small depth, and dry out quickly. Drought problems, therefore, arise more readily in these shallow soil areas than in the generally deeper mantle rock of the Highland Rim. The fine texture of Decatur soil, however, means that it can be built up. Elements making for soil fertility are not washed away as readily

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95/ J. W. Moon, Associate Soil Scientist of the U. S. Bureau of Chemistry and Soils (with the Tennessee Valley Authority, April 1939) describes some of the essential differences between the Dewey and Decatur soils as follows: "In general appearance they [Dewey] differ from the Decatur soils primarily in having lighter brown surface soils and lighter reddish subsoils. . . The organic content is moderately high and well mixed with the soil material although this soil is not quite so rich in organic matter as the Decatur silt loam. . . This soil [Dewey], like the Decatur silt loam, has a wide crop adaptation, but the Dewey silt loam is inherently a little less fertile." See *Brief Soil Description for Demonstration Farms in Jefferson County, Tennessee*, n.d. (mimeographed material prepared by the Tennessee Valley Authority), pp. 3-4.

96/ H. H. Bennett, *The Soils and Agriculture of the Southern States*, pp. 199-206; Milton Whitney, *Soil and Civilization*, pp. 67-68.

97/ Whitney, ibid., p. 67.

98/ Ibid.

99/ Bennett, op. cit., pp. 204-06.

100/ Ibid.

101/ Ibid., p. 207.

in these fine-textured soils as they are in coarser, sandier soils. With good farming practices, involving effort and cost, these soils can be made to yield as well as many of the good soils in the North and Middle West. Contrariwise, the soils can readily be run down to such an extent that yields reach the vanishing point and abandonment or soil recovery is imperative.

The factor of soil potentialities cannot be overstressed in the agriculture of the South.[102] Soils with good structure can be built up or depleted in a relatively short time, and on the same soil series, frequently in juxtaposition, are found on the one hand luxuriant crops and on the other stunted crops and wasted land. The cultural factor, as expressed in land utilization, is here of extreme importance. Table 14 reflects such differences.

The higher valuation of the buildings on the German-Swiss farms also relates to better farming practices. These higher valuations are only in part due to the better dwelling houses. In part they result from the large barns and sheds on these farms. The question arises whether these large barns and sheds are needed in the relatively mild climate of Franklin County. The general absence of such structures in the South suggests that they may not be needed. The relatively small number of stock in the South plus the mild climate are usually pointed out to explain the lack of substantial barns. The fact remains, however, that whatever stock is found has been inadequately housed since pioneer times. Cattle and hogs still roam at large and rarely find shelter under a roof. Work stock is often out in good weather and bad, or is placed in a crude shed that frequently stands at a precarious angle. Agricultural experts in all parts of the South agree that all stock needs to be sheltered, during the cool-to-cold, wet winter season, to conserve heat energy and make for better gains.

The large barns and sheds on the German-Swiss farms are also used to store many varieties of hay, and frequently all the straw and shredded corn stalks. In the opinion of some county agricultural agents in the South, native grasses cut for hay may well be kept outside in well-constructed stacks. Good legume hays, however, should be placed under a roof because of high rainfall and their consequent deterioration. Moreover, it is a handy arrangement where much stock is fed and this is true of straws and fodder.

As Franklin County is not in the Cotton Belt proper and stock raising is important in the enterprise of its farmers, the farm structures and particularly the barns in the county generally are larger and better than those common farther south. Nevertheless, a great discrepancy exists between the structures on the German-Swiss farms and those in the control areas, and the German-Swiss use their barns and shelters much more effectively than do other farmers generally. This observation was checked on numerous occasions in the fall of 1937. Most of the barns in the control areas contained little if any hay at the outset of winter and in general showed a lack of repair and use. At this same time every barn visited in the German-Swiss settlement (and this

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102/ See L. Wolfanger, *The Major Soil Divisions of the United States*, pp. 88-89 and 108-109.

means most of them) was full of all kinds of hay, straw, and fodder. For example, one of the barns, a 2-story structure measuring 110 feet by 80 feet (two barns together), contained alfalfa hay, red clover hay, crab grass hay, millet and bean hay mixed, shredded corn, wheat straw, oat straw, barley straw, corn, oats, barley, wheat, crimson cloverseed, and ground grain feed. In addition, this farmer had two large filled silos and several fields of crimson clover for winter pasture. Another farmer with nearly as much storage space reported alfalfa hay, pea hay, bean hay, shredded corn, shock corn, oat straw, wheat straw, barley straw, rye straw, barley, wheat, oats, rye, lespedeza, buckwheat, crimson cloverseed, and corn. This farmer also had nearly 20 acres in crimson clover for winter pasture, had the silo filled, and spoke reluctantly of having left some threshed lespedeza straw in the field because he had no room to store it. Much of this straw is used merely for bedding to absorb waste liquids.

Although the German-Swiss generally have more commodious houses than prevail in any of the control areas (table 13), it should not be assumed that no good houses are to be found in the latter areas. In terms of averages, however, the houses of the German-Swiss are highly superior. The control areas contain numerous small unpainted houses that are built of unfinished lumber. Many, perhaps most, do not have basements or even substantial foundations and furnishings are inexpensive. These structures remind one that the frontier with its somewhat crude and simple tastes and practices has not been erased in Franklin County.

Like other figures given in table 13, the difference in value of implements between the German-Swiss and the control groups is disproportionately greater than the difference in average holdings. On the whole, the German-Swiss have larger and better farming implements than the farmers in the control areas. In part, these implements are required for carrying on the more highly diversified farm practices of these people and this equipment enables them to do a more thorough job in working the fields and crops. Slightly less than one-third (11 out of 39) of the German-Swiss reported tractors in 1930.

As shown later, the Negroes operate all these implements as competently as do the whites. This practice should interest farmers in the Cotton Belt, many of whom insist that Negroes cannot be trusted with expensive farm machinery. The Negro, like the white man, is not born with the ability to run a tractor, but he can learn to do so if given the opportunity.

Mortgage Debt

When a farmer begins to keep books, he has left the chrysalis of a self-sufficing farmer and emerged as a money farmer, a type of capitalist, a speculator. In general, farm expenditures as well as income are estimated. The former can be estimated with a pretense of seriousness; the latter is a bold and an all-too frequently bad gamble. Producers of staple farm products who have estimated their income since the period of the World War and have borrowed substantially on what appeared reasonable returns are today carrying a debt burden which may never be paid in terms of former values. The largely self-sufficient farmer, who did not go in for "improved methods in farming"

and did not keep books is frequently in better shape than his enterprising contemporaries. These observations have relevance to the farming situation in Franklin County as well as in the country at large.

As early as 1930, 29 percent of the German-Swiss were carrying farm mortgages, and the percentages for the control groups range somewhat above and below this figure (table 15). Three of the four German-Swiss part-owners reported farm mortgages, reflecting a rather disproportionate incidence of real-estate encumbrances. Although the German-Swiss reported larger mortgages than any of the control groups, the percentage of total farm value mortgaged by the full-owners was smallest in this group. These comparisons hold true particularly for the island and control groups 1 and 2. The mortgage load reported by control group 3 is light, but this group emphasizes cotton production, and crop loans as well as other loans are common among them.

Those who know the credit situation in the county seem to be agreed that there is no marked disparity in the ratio of indebtedness to assets between the various control groups, and that of these three control groups, control group 1 in general has the most favorable credit standing. For all groups, it was held, the German-Swiss have the best credit standing. Farm mortgages, of course, represent only one form of rural indebtedness. Crop loans and liens on chattel property are common in farming sections. To obtain a somewhat more composite picture of the indebtedness in the island and control areas, records in the county courthouse were checked. It was soon discovered, however, that numerous instruments which had expired and for which settlement had apparently been made were still unreleased on the county records. Such cases were not the exception but were so numerous that it seemed to be the rule for some local loan agencies not to release their liens officially. This situation precluded a proper inventory of indebtedness.

Neglect to release these instruments properly may be founded on a purpose. An unreleased instrument on the county records reflects a standing lien on property of one kind or another and credit institutions not in possession of personal papers must accept this record more or less at its face value. The debtor, former or present, therefore, finds it convenient, if not imperative, to return to his one-time or present creditor to do business. In other words, the practice tends to establish rather permanent relationships between given debtors and creditors.

Table 15.--*Mortgage debt in the island and in the control groups, April 1, 1930.* [1/]

Item	Full-owners	Part-owners	Total
	Percent	*Percent*	*Percent*
Percentage reporting:			
Island	22	75	29
Control group 1	31	x	31
Control group 2	36	36	36
Control group 3	23	23	23
Percentage of total farm value mortgaged:			
Island	7.3	48.2 [2/]	14.5 [2/]
Control group 1	19.7	x	19.7 [2/]
Control group 2	21.4	12.9 [2/]	19.1 [2/]
Control group 3	7.4	6.1 [2/]	6.9 [2/]
Amount reported:	*Dollars*	*Dollars*	*Dollars*
Average:			
Island	4,038	11,333	--
Control group 1	2,759	x	--
Control group 2	1,906	1,010	--
Control group 3	1,263	849	--
Median:			
Island	1,950	8,000	--
Control group 1	1,450	x	--
Control group 2	1,012	600	--
Control group 3	950	500	--

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ Includes value of rented land.

It is difficult to make any significant generalizations about the mortgage situation as between the island and the control groups. Field work brought out the fact that many of the very best farms, both in the island and in the control groups, are heavily mortgaged. Usually a tremendous effort is made to meet payments and reduce debts by producing large crops and much livestock. All too frequently such effort is rewarded by additional losses. Many of the farmers who merely subsist have some of the best records with reference to encumbrances on real estate. It seems that, on the whole, the small farmer in the South has been very reluctant to mortgage his farm. Crop and seed loans, on the other hand, particularly among cotton farmers, are almost taken for granted.

As newcomers, the German-Swiss were conservative — getting out of debt and then keeping out of debt was a firm principle among them. By a plan of getting their living from the farm and carefully applying their cash income, they were practically debt free for many years. The difficulties were largely initiated by the settlement of estates and, indirectly, by the inflated land values during the period of the World War and the 1920's. Adjustments that were incidental to the settling of estates, so that all heirs would be provided for, frequently resulted in mortgaged holdings. As heirs and prospective heirs frequently needed cash to become established, the mortgagees were usually loaning agencies. Thus, the "home place" and the acquired holdings of some heirs which were partly paid for in cash were frequently mortgaged in related adjustments. Land values were high. Then came deflation, low prices for land, and low agricultural prices. Continued low income has meant that these obligations have not been retired and cannot be retired at the rate expected. This situation is reflected in table 15.

Farm Expenditures, 1929

Feed. The agricultural enterprise of Franklin County may be described as either general farming or diversified farming. In this farming program, cotton production plays a part, as shown later. Nearly all farmers produce varying quantities of feed to maintain and fatten stock. Among the larger farmers, particularly among the German-Swiss, the practice of fattening one or several kinds of stock is common. The full-owners and part-owners bought the greatest quantities of feed in 1929, particularly in the island and in control group 1 (table 16). Both of these groups are located in district 5, which is the most prominent stock-raising section in the county.

Farm Labor Cost. The German-Swiss farmers hire more help to work their larger holdings than do the farmers in the control groups (table 16). The amount spent by the full-owners per acre of cropland harvested in 1929 for the island farmers and the control groups is $3.80, $2.50, $1.50, and $1.55, respectively. For all tenure groups the amount spent is slightly lower, since less help was hired by the tenant groups. The fact that *other tenants* and even croppers spent some money for hired help suggests correctly that the Franklin County type of tenant, on the average, is not so poverty-stricken as similar groups are likely to be in the Cotton Belt proper. Many of these croppers and other tenants rent land from relatives and are rather independent in their farming program.

Table 16 shows the average wage paid in the island and in the control groups. An important distinction must be kept in mind when interpreting these data — on the large farms, particularly on the German-Swiss farms, Negro families are frequently provided with living quarters, a small tract of land, and some stock. The average wage presented in table 16, therefore, represents a cash income above the requirements that are furnished. On the other hand, no additional furnishing is generally given by the small farmers, particularly by croppers and other tenants. Moreover, the hired help on some of the larger farms, particularly among the German-Swiss, takes one or two meals a day in the owner's home, having the same food as that prepared for the owner's family. (Negroes have their meals after the white people have finished.)

Table 16.—*Farm expenditures in the island and in control areas, by tenure groups, 1929* [1/]

Purpose of expenditures and farm group	Percentage of farms reporting					Average expenditures reported				
	Full-owners	Part-owners	Croppers	Other tenants	Total	Full-owners	Part-owners	Croppers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Feed:										
Island	66	100	x	80	72	232	460	x	150	241
Control group 1	81	78	x	50	66	137	44	x	30	103
Control group 2	72	64	26	53	52	79	51	32	54	63
Control group 3	47	55	17	50	42	72	60	18	78	64
Farm labor cost:										
Island	82	100	x	80	80	310	528	x	62	302
Control group 1	76	67	28	56	64	128	70	20	20	96
Control group 2	57	47	30	34	43	65	24	27	15	41
Control group 3	45	51	11	33	36	59	47	13	40	48
Average daily wage paid:										
Island						1.25	2.05	x	1.72	1.37
Control group 1						1.60	1.19	1.00	1.05	1.50
Control group 2						1.15	1.25	1.22	1.25	1.17
Control group 3						1.00	1.00	1.08	1.05	1.02
Commercial fertilizer:										
Island	85	100	x	80	85	156	268	x	90	158
Control group 1	91	89	73	95	89	84	39	42	53	68
Control group 2	89	96	73	79	83	77	56	51	56	63
Control group 3	90	94	31	74	73	70	66	51	50	63

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

For meals eaten in their own homes, the help (nearly all Negroes) are given practically all the food items produced on the farm that they do not produce themselves -- including a great deal more than fat back, ground corn, and molasses. As the German-Swiss are noted for their good and varied cooking, these Negroes share a quantity and quality of food that is available to but few of the hired Negroes in the South. In the opinion of some local citizens -- not German-Swiss -- who know the county well, the Negroes who work for the more prosperous German-Swiss farmers live better than most of the white croppers and tenants in the county. The cash income of some of these Negro families is further supplemented by the wages of the women for domestic service. 103/

Most of the German-Swiss upon their arrival in Franklin County were so poor that they could not afford to hire even the "incompetent Negro", as they considered him. The tremendous task of building up the land and erecting the large buildings was mostly done by their own labor. Later, however, the Negroes were hired and trained to do the varied tasks required in thoroughly diversified farming. As one of these farmers said, "We merely took them into the field or barn with us and told them to keep up with us, if they could." Besides learning varied tasks, and to use farm machinery, the Negroes learned to move more rapidly than they had been accustomed to do. The German-Swiss are hard, active workers and they hire help merely to supplement their working program. This is also true of the women of the families, who spend few hours in idleness.

Commercial Fertilizers. The average German-Swiss who reports the purchase of commercial fertilizer spends more per acre of cropland harvested than the average reported by any of the control groups, but he spends a smaller percentage of the value of the products he produces than does the average farmer in control groups 2 and 3. Dividing the average number of acres harvested by each of the four groups (weighted in terms of farmers reporting the purchase of commercial fertilizer) into the average amount spent by each group for commercial fertilizer in 1929, gives the following averages for the island and control groups 1, 2, and 3: $1.93, $1.36, $1.86, and $1.54. On the other hand, the ratios of the average amounts spent for fertilizer to the average value of products produced and consumed on the farm are as follows for the four groups: 6.2, 6.0, 7.1, and 8.8 percent (weighted in terms of farmers reporting the purchase of commercial fertilizer) (table 40).

Not all the German-Swiss farmers or those in the control groups buy commercial fertilizer every year. A substantial German-Swiss farmer, asked how much commercial fertilizer he had bought during 1937, replied, "None. But I hauled out over 500 loads of manure." This farmer was known for his high crop yields. Corn yields that averaged less than 50 to 60 bushels per acre he considered a disgrace. 104/

103/ Item 38 on the general farm schedule for 1930 reads: "Amount expended *in cash* in 1929 for farm labor (exclusive of housework)."

104/ The farmer is Fred Zimmerman, since deceased, who is referred to as Franklin County's "Champion Tiller of the Soil" in the "Third Annual Franklin County Crimson Clover Festival" (1938) leaflet. Mr. Zimmerman came to Belvidere in the 1880's from the Gruetli settlement on the Cumberland Plateau. When he arrived, he owned merely the clothes on his back. Since then, he spent over $150,000 in the purchase of land, and his place near Belvidere is one of the outstanding farms in the South.

Farm Machinery and Facilities.

Higher standards of living today are largely compounded out of mechanical labor-saving devices. Therefore, standards of living in a community may in part be determined by a sample census of these facilities.[105/] Table 17 suggests much with reference to the plane of living in the island and the various control groups in 1930. The percentage reporting ownership of cars or motor trucks or both does not vary as between the part- and full-owners and all groups combined for the German-Swiss. In the control groups, the tenants invariably reported fewer cars.

Table 17.--*Percentage of farmers in island and in control groups reporting farm machinery and facilities, April 1, 1930.* [1/]

Item and farm group	Full- and part-owners	All tenure groups
	Percent	*Percent*
Automobiles and trucks:		
Island	87	87
Control group 1	55	41
Control group 2	33	25
Control group 3	36	27
Tractors:		
Island	35	28
Control group 1	x	x
Control group 2	6	4
Control group 3	x	x
Telephones:		
Island	68	59
Control group 1	42	30
Control group 2	4	3
Control group 3	19	12
Water piped into house:		
Island	26 [2/]	28
Control group 1	x	x
Control group 2	x	x
Control group 3	x	x
Electricity in house:		
Island	48	44
Control group 1	16	12
Control group 2	--	--
Control group 3	--	--

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ In one of the tenure groups fewer than three farmers reported. They are not included in this figure, but are included in the total.

105/ An interesting and suggestive map is presented in Carter Goodrich, Bushrod W. Allin, and Marion Hayes, *Migration and Planes of Living*, which is based on per capita income tax returns, residence telephones, and radios. The title of the map is "Plane of Living, 1928-1929" (between pp. 10-11). In terms of these factors, the South was found to be very deficient.

There were about as many tractors in the island (39 farmers considered) as in the three control groups combined (473 farmers) in 1930. There are striking contrasts in the number of telephones reported, and more German-Swiss homes had water piped into the house and more were supplied with electricity than all the homes in the control areas combined -- though the ratio of farms considered is 39 to 473. In recent years, the Tennessee Valley Authority has built rural electric lines in Franklin County and the use of electricity has become very general, but as early as 1930 nearly half the German-Swiss rural homes had electricity. These people were apparently among the very first to develop rural electrification in the South.

Cooperative Selling and Buying

Although cooperative enterprise did not flourish in the county, data on the value of products sold or bought cooperatively in 1929 are decidedly in favor of the German-Swiss. The percentage of farmers who sold through such organizations are 16, 5, x, and 0 respectively for the island and control groups 1, 2, and 3. The percentages of those that bought through such organizations are 36, 7, 3, and 0 for corresponding groups. Apparently all groups would profit from more cooperative activity.

2 STOCK ON FARMS AND ANIMAL PRODUCTS

The raising of livestock has always been important in the farming program of Franklin County. During more recent years, the fencing of fields has created an urgent need for good and continuous pastures and the production of good hays. Unfortunately the farmers in the county generally, instead of raising more and better stock on more and better pastures, including year-round pastures, have devoted more land to cotton, a quick cash crop. Corn and wheat have been imported into the county in recent years to be manufactured into flour and meal, and horses and mules have been imported to work the fields. This seems an unfortunate trend. With the superior soil found in much of the county, its people have always been in a position to profit from the fact that prices for hay, grain, and work stock are higher in the Cotton Belt than elsewhere in the country, but this opportunity was never fully appreciated and never effectively exploited.

Horses and Mules.

Table 18 shows the average number of horses and mules on the farms in the island and control groups in 1930. As there is a great deal of overlapping in the listing of horses and mules, it is impossible to determine the average number of head of work stock (horses and mules) to be credited to each farmer reporting. The number of tractors reported by each group must also be taken into consideration. The number of tractors in the German-Swiss community in 1930 was equal to that reported by all control groups combined

Table 18 *Horses, mules, and hogs reported by island and control areas, by tenure groups, April 1, 1930.* 1/

Farm group	Percentage of farms reporting					Average number reported				
	Full-owners	Part owners	Croppers	Other tenants	Total	Full-owners	Part-owners	Croppers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*
Horses:										
Island	93	100	x	100	92	4.2	4.2	x	2.6	3.9
Control group 1	80	78	27	72	71	2.2	3.0	1.7	1.8	2.2
Control group 2	79	76	36	62	62	1.9	1.7	1.6	1.7	1.8
Control group 3	66	59	18	57	50	1.6	1.7	1.1	1.6	1.6
Mules:										
Island	83	100	x	80	82	3.4	4.8	x	2.0	3.3
Control group 1	83	56	27	89	74	2.8	4.0	2.0	2.4	2.8
Control group 2	75	84	49	60	65	3.1	3.0	2.0	2.0	2.6
Control group 3	83	96	25	72	69	2.9	2.4	2.5	2.2	2.6
Hogs:										
Island	96	100	100	100	98	15.5	33.3	7.0	10.8	16.1
Control group 1	78	100	27	95	77	13.4	11.8	5.7	3.8	10.3
Control group 2	81	72	49	49	62	12.4	8.7	6.5	6.6	9.4
Control group 3	76	90	46	63	68	7.8	5.3	3.4	4.3	5.6

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

Field work revealed that the island -- and perhaps control group 1 -- was sending horses and mules out of the county, whereas much of Franklin County was definitely deficient in work stock and was bringing animals in.[106] Raising some work stock for sale is part of a highly diversified program of farming, as carried on by the German-Swiss. In this, as well as in other respects, these people are in a strategic position to profit from the relatively high prices for work stock that prevail in the Cotton Belt proper. The lowest average prices for horses and mules in the United States are found in the States bordering the Rocky Mountains to the east. From these States the average price per animal becomes progressively greater westward and eastward. The intermediary position of Tennessee, and particularly Franklin County, between the deficit and surplus areas places it in a position to profit from the relatively high prices of these animals to the east and south.

Hogs.

Up to 1920, Franklin County was consistently credited with more than 20,000 hogs by the various census reports. The census of 1860 credited the county with 33,011 hogs. For this same census, the average number of hogs reported per farm in district 4 was 59; for districts 5 and 9 the average numbers reported were 43 and 28 (table 4). The average number per farm according to data presented in table 18 has decreased sharply. For 1929 and 1934 only about 13,000 hogs were reported in the county, but since the period of the World War, cotton production has become prominent (see p. 87). This is a significant change in the farming enterprise of the county.

In keeping with their larger holdings, the German-Swiss reported larger herds of hogs in 1930 than did the farmers in the control groups. Of the German-Swiss croppers and other tenants 100 percent reported hogs, whereas among the tenants in the control groups numerous farmers were without hogs. For instance, only 27 percent of the croppers in control group 1 reported swine (but there were only 11 farmers in this tenure group). Only about half the croppers in control groups 2 and 3 reported the ownership of hogs.

Farmers in Tennessee have not enjoyed price advantages with respect to hogs comparable with those for work stock. The average prices for hogs in Tennessee from 1910 to 1934 were 2 percent below Iowa prices and 4 and 5 percent below Kentucky and Illinois respectively.[107] The difference was partly due to the inferior grade of animals in the State. But since the World War, the number of hogs has declined in the South, and in more recent years -- 1930 to 1934 -- the average price in Tennessee exceeded the prices prevailing in Iowa and Illinois by 8 and 2 percent respectively.[108] With the superior soil in much of Franklin County, corn and hog production could be increased considerably

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106/ These facts may be reconciled with the figures given above in that the "efficiency ratio" of utilizing work stock may well vary as between the various groups as well as between different sized farms. As has been pointed out, smaller holdings prevail in the control groups.

107/ Charles E. Allred and Paul T. Sant, *Regional Differences in Farm Price of Hogs, Tennessee and United States*, Monograph No. 37, Agr. Exp. Sta., Univ. of Tenn., Knoxville, May 1937, p. 26, Fig. 17.

108/ Allred and Sant, op. cit., p. 28.

All Cattle

The German-Swiss give considerably more emphasis to cattle raising, feeding, and milking than do the farmers in the control groups (table 19). Although the average number of acres harvested by the German-Swiss is only about twice that harvested by control groups 2 and 3, the former have on an average from 3 to 5 times as many cattle. The difference in average number of cows milked is almost as great. Of particular interest is the fact that all the German-Swiss tenants reported cows milked during 1929, whereas only 40 percent of the croppers in control group 3 reported milk cows. Differences in food habits account in part for this difference.

Most of the German-Swiss retain mixed breeds of cattle — cattle that will, so they say, do well in the feed lots and do fairly well as milkers. In this respect, as in many others, the island strikes an observer as a misplaced section of the Middle West, where dual-purpose cows are very common. In the control groups, milk cows are composed almost entirely of Jersey stock, which prevails throughout the South.

Table 19 also shows the average number of pounds of milk produced per cow milked in the island and in the control groups. Apparently no generalizations can be drawn from the figures listed. The average quantities of milk produced per cow in Franklin County and the State of Tennessee in 1929 were 3,365 and 3,545 pounds. The figures for the groups studied range both below and above these averages. In part, differences between minor civil divisions are traceable to enumerators. Questions that require the making of estimates usually bring available aptitudes into play, and aptitudes among human beings vary.

Although the average production figures in table 19 exceed, in part, the average quantity of milk produced per cow in Tennessee, they are not impressive from the standpoint of good milking stock for the cows milked are primarily beef cattle. The question arises as to why the German-Swiss do not maintain better milking stock. Good milking stock is not good feeding stock; to be efficient in both capacities really requires the maintenance of two herds, which brings many difficulties. The German-Swiss, like most farmers in the Middle West, prefer to keep cattle which, *presumably*, do well both as feeders and as milkers. An elderly German-Swiss farmer, asked why he milked a herd of 8 cows, none of which excelled as a milker, reflected a moment and then replied, "But those cows turn out an awful lot of manure!" That most soils in the South need manure no one can deny.

From 1910 to 1934, the ratio of Tennessee cattle prices to average prices prevailing in the United States was 83.4 (United States equals 100).[109/] In the deeper South, average cattle prices are even lower. Some good beef stock is found in the Central Basin of Tennessee, the Valley of East Tennessee, and, to some extent, on the Highland Rim. For the State as a whole, however, scrub cattle and Jersey cows predominate. Much of the so-called beef in the South comes from worn-out Jersey cows and Jersey calves. This relative

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109/ According to data gathered from publications of the Bureau of Agricultural Economics, U. S. Department of Agriculture, and by the Agricultural Experiment Station of the University of Tennessee, Knoxville.

Table 19 *Number of cattle and milk cows, milk produced, butterfat and butter sold* [1] *as reported by island and control areas, tenure groups.* [2]

Farm group	Percentage of farms reporting					Average number or amount reported				
	Full-owners	Part owners	Crop-pers	Other tenants	Total	Full-owners	Part owners	Crop-pers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*
All cattle:										
Island	96	100	100	100	98	21.1	48.7	10.3	11.4	21 9
Control group 1	94	100	55	95	89	9.8	9.3	3.0	6.0	8.3
Control group 2	92	100	73	75	84	10.4	6.5	4.7	4.6	7.1
Control group 3	94	98	51	86	83	6.0	4.4	3.2	2.6	4.4
Milk cows:										
Island	89	100	100	100	92	7.0	11.3	4.6	2.8	6.7
Control group 1	96	100	45	89	88	4.2	4.4	1.4	2.9	3.7
Control group 2	92	100	72	81	83	2.6	1.8	1.3	1.6	2.0
Control group 3	93	98	40	74	83	2.1	2.0	1.4	1.8	1.9
Average milk produced per cow:	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Island	89	100	100	100	92	2,975	3,870	4,909	4,025	3,250
Control group 1	96	100	45	89	88	2,615	2,538	3,180	3,310	2,672
Control group 2	92	100	72	81	83	2,810	3,645	3,680	3,225	3,155
Control group 3	92	98	40	74	83	3,320	3,740	3,990	4,160	3,680
Butterfat sold:										
Island	78	75	x	60	74	770	2,340	x	557	940
Control group 1	46	78	x	39	43	384	363	x	441	383
Control group 2	31	12	6	11	16	271	571	470	327	333
Control group 3	15	x	x	11	9	265	x	x	395	262
Butter sold:										
Island	—	—	—	—	—	—	—	—	—	—
Control group 1	—	—	x	—	x	—	—	x	—	x
Control group 2	x	—	x	x	2	x	—	x	x	164
Control group 3	16	18	x	9	11	127	129	x	205	140

1/ Cattle on hand April 1, 1930; production and sales, 1929.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

scarcity of good beef stock may suggest that really good meat animals will command high prices at local slaughter houses, but the contrary is true. Packers insist that local meat shops cannot dispose of quality beef at the prices that need to be charged. The problem is essentially one of means and accustomed taste. In spite of these considerations it must be said that there is a market for beef in the South, that much beef is brought into the section, and that beef cattle can be made to play a profitable part in diversified programs of farming.

Not only is the South generally deficient in good milking stock and in the consumption of milk products, but the average value per milk cow in the South is actually lower than in the rest of the country. 110/ In large part this relates to the low yield of milk and butterfat (total pounds, not percentage butterfat in milk) per cow. In part it reflects a condition with respect to food habits, in which dairy products play a less important part than in the rest of the country. Particularly is the latter true of Negroes. However, farmers in the South keeping good, tested herds (tested for both disease and yields), usually realize good prices for stock sold.

Average butterfat prices in Tennessee are among the lowest in the country. From 1930 to 1936 the average price per pound of butterfat in Tennessee ranged between 21 and 23 cents (a price that yielded little if any profit) whereas in Maine, New Hampshire, and Vermont the price ranged between 33 and 35 cents. 111/ In all other States prices ranged between these averages. The relative average price received in the various States is mainly determined by (1) the status of the State as a surplus or deficient producer of butterfat, (2) the use made of the butterfat -- butter, ice cream, or table use, (3) marketing facilities, and (4) quality of cream produced. In each of these respects, Tennessee producers do not fare well.

With respect to farm butter, Tennessee and Virginia received the lowest average prices in the United States from 1930 to 1936 (19 to 21 cents per pound). With but few exceptions, the production of farm butter for sale is an outmoded practice and should be abandoned.

Chickens and Eggs.

The German Swiss farmers kept more chickens than did the farmers in any of the control groups; they produced more eggs, sold more eggs, and used more eggs (table 20). While the great majority of all farmers kept chickens and produced eggs, only 44 percent of the croppers in control group 3 sold eggs. Only 75 of the part-owners in the island reported eggs sold. As there are only 4 part-owners in the island, the failure of one farmer to report in this instance affects the percentage markedly. The average number of eggs sold by the croppers in control group 3 exceeds the average number of eggs produced. Among the 44 percent of croppers that reported eggs sold, some apparently sold a considerable quantity.

The figures under "average number of eggs consumed and used" are rather interesting. On the whole, the German Swiss seem to use about twice as many

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110/ *Agricultural Statistics*, 1937, p. 294.

111/ C. E. Allred and Paul T. Sant, *Regional Differences in Farm Price of Milk Cows and Dairy Products, Tennessee and United States*, Monograph No. 68, Agr. Exp. Sta., Univ. of Tenn., Knoxville, 1938, p. 30, Fig. 14.

Table 20.- *Number of chickens owned, and eggs produced, sold, and consumed* [1/] *in the island and control groups, by tenure groups.* [2/]

Farm group	Percentage of farms reporting					Average number reported				
	Full-owners	Part-owners	Croppers	Other tenants	Total	Full-owners	Part-owners	Croppers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*
Chickens over 3 months old:										
Island	100	100	100	100	100	73	63	63	58	69
Control group 1	100	100	64	95	94	63	56	22	36	53
Control group 2	95	96	89	98	94	48	44	29	25	36
Control group 3	97	100	80	89	92	40	34	18	28	31
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Dozen*	*Dozen*	*Dozen*	*Dozen*	*Dozen*
Eggs produced:										
Island	100	100	100	100	100	525	498	370	412	496
Control group 1	100	100	64	95	94	315	402	168	191	285
Control group 2	95	96	89	98	94	328	233	176	181	236
Control group 3	97	100	80	89	92	286	238	154	196	227
Eggs sold:										
Island	100	75	100	100	98	371	410	265	290	355
Control group 1	96	100	64	89	90	231	324	117	134	211
Control group 2	89	92	75	85	84	250	177	130	124	177
Control group 3	80	73	44	70	67	179	131	164	161	161
Average number of eggs consumed:										
Island						154	88	105	122	141
Control group 1						84	78	51	57	74
Control group 2						78	56	46	57	59
Control group 3						107	107	——	35	66

1/ Chickens on hand, April 1, 1930; production and sales, 1929.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

eggs as do the farmers in the control groups. This is partially traceable to the unlike cooking habits and food habits that still prevail among these various people, but the larger farms in the island, employing more help, sometimes give one and two meals a day to the hired help. These considerations make it impossible to determine the per capita consumption of eggs by the various groups, but available evidence suggests that the German-Swiss consume more than do the others.

Statistics on the average prices for chickens and eggs do not suggest, at least superficially, that Tennessee enjoys any particular advantage in the production of poultry products. In recent years the average prices for poultry and poultry products in Tennessee have been among the lowest in the country. [112] To a certain extent this may reflect inferior stock and products, for generally fowl are "ill housed and ill fed" in the South. Most farmers in this section cannot really afford -- from the standpoint of health and money -- to be without chickens. Considerable quantities of eggs are still brought into the deeper South at prices that the poor -- and that is the average -- farmer cannot pay.

Sheep

The censuses of 1840 to 1860 credit Franklin County with about 10,000 sheep. [113] In recent years the sheep population of the county has been less than a third as much. [114] The disappearance of these animals from the farms of Franklin County is shown even more strikingly by a comparison of tables 6 and 21. Aside from the German-Swiss (mostly in district 5) only 3 to 4 percent of the farmers still retain sheep.

Sheep are close grazers and are not very discriminating in their appetite for plants and weeds. On a farm that produces a variety of products, sheep are usually an asset in clearing up odds and ends of vegetation that otherwise might be wasted. During the winter, many farmers in Franklin County, particularly the German-Swiss, winter-pasture them in their fields of crimson clover.

Most of the sheep in Tennessee are found in the Central Basin, where grasses are grown easily. With proper care and reasonable encouragement, an abundance of grass, legumes, hay, and all sorts of feed may be grown in the Highland Rim section (in which the island and control groups are located); so the growing and feeding of stock could be greatly intensified. In such a program, the raising of sheep and the production of wool can play an important part. The German-Swiss have taken greater advantage of this opportunity than have the farmers in the control groups.

112/ *Agricultural Statistics*, 1937, pp. 325 and 331.

113/ Census of 1840, 8,531 head; 1850, 10,904 head; 1860, 9,480 head.

114/ In 1930 the farmers of the county reported 2,526 head; in 1935, 2,940 head.

Table 21.--*Sheep owned April 1, 1930, sheep shorn, and wool reported by the island and control groups for 1929.*[1/]

Farm group	Percentage of farms reporting		Number or amount reported	
	Full- and part-owners	All tenure groups	Full- and part-owners	All tenure groups
	Percent	*Percent*	*Number*	*Number*
Sheep:				
Island	33(x)	33	54(x)	63
Control group 1	—	x	—	x
Control group 2	4(x)	4	67(x)	42
Control group 3	5	3	20	20
Sheep shorn:				
Island	25(x)	25	24(x)	26
Control group 1	x [2/]	x	x	x
Control group 2	4(x)	3	31(x)	27
Control group 3	5	3	18	18
	Percent	*Percent*	*Pounds*	*Pounds*
Wool shorn:				
Island	25(x)	25	138(x)	160
Control group 1	x	x	x	x
Control group 2	4(x)	3	142(x)	128
Control group 3	5	3	48	48

1/ Computed from agricultural schedules. Census of 1930, Bureau of the Census.

2/ X indicates that fewer than three farmers reported; (x) after a figure indicates that they are not included for one tenure group; "x" quantities are included in totals where totals are given.

The average farm value per head of sheep in Tennessee was slightly below the national average in 1937. $5.70 against $6.01.[115/] In part, this relatively lower value may be accounted for by the fact that the average sheep in this State produces only about half as much fleece as the average sheep in the United States -- 4.1 pounds compared with 7.94 pounds in 1936. The quantity of wool produced per sheep in the island and in control groups 2 and 3, respectively, averaged 6.15, 4.75, and 2.66 pounds. These figures, which range above and below the average yield in the State, show a considerably above average production for the German-Swiss.

3. FARM CROPS IN 1929

Corn

From the standpoint of total acreage and general popularity corn is and always has been the No. 1 crop in Franklin County. It nurtured the pioneers through their early years of hardship and adaptation. Its adaptability, ease of planting and harvesting, and popularity as food and feed have served to maintain its prominence in the farming program. But, as in many

115/ *Agricultural Statistics*, 1937, p. 271.

other places, this cereal, while building up muscles and tissues, has torn down the structure of the soil. Corn is, therefore, also the No. 1 destroyer of Franklin County's most fundamental and essential resource. Today, as in the past, this is largely the farmers' fault.

Lack of crop rotation in the early history of the county has been pointed out. Corn and, to some extent cotton, was used in monotonous succession until the land was ruined. A new crop of corn was frequently -- and some say usually -- planted between the stalks of the previous crop without plowing or turning the whole surface. Applying manure and fertilizer to the land was exceptional. As productivity declined, land was frequently fallowed between crops. Later it was abandoned and new land was sought. This cyclical history held in Franklin County as in the South generally and these destructive practices are not yet completely of the past.

Table 22 shows the part corn had in the farming program of the German-Swiss and the various control groups in Franklin County in 1929. There is no considerable difference between the island and the control groups in the average number of acres in corn, but there is a very considerable difference in the percentage of cropland in corn. While the German-Swiss devote about one-fourth of their available acreage to corn, control groups 2 and 3 devote nearly 50 percent of their land to this crop. The former, with the exception of the croppers, do not husk all corn. Nearly all of nonhusked corn is used for silage. Twelve of the German-Swiss farmers reported corn cut for silage in 1929. This number exceeded all those reporting corn used for the same purpose in all three control groups combined.

Yield of corn per acre is much higher for the German-Swiss than it is for the control groups (being about 100 percent higher than in control groups 2 and 3) but the average yield for all groups is not impressive. Yields for individual farmers far exceed the averages. The best farmers expect from 50 to 60 bushels of corn an acre in years when there is not an excess of moisture or drought. With reasonable care, yields of 30 to 40 bushels an acre are not difficult to obtain. That average yields fall as low as shown in Tables 22 and 23 reflect indifferent and bad farming methods, as a rule. It suggests the extent to which farming methods might be improved. The fact that the average yields for the island greatly exceed the other average yields merely indicates the presence of a greater number of relatively more thorough farmers than there are in the control areas. These observations confirm what was previously said about the undeveloped potentialities of much of the farm land in the South.

That the average yield of corn per acre was rather low in Franklin County in 1929 is shown by table 23. An average yield of 19 to 20 bushels seems to be more nearly typical than the average of 16.7 realized in 1929. This low average yield resulted from unusual weather conditions. The best data regarding precipitation that can be applied in this case are those recorded in Tullahoma, Tenn., a town about 16 miles northwest of Winchester (table 24). Rainfall was considerably above the average for the first 5 months of 1929, and was unusually heavy (12 inches) during March. Weather of this kind results in cold wet ground, delayed planting, delayed sprouting of seed, rotting of seed, washed-out seed, and destruction of young plants by cut

worms. More nearly normal weather from June forward would have served to overcome much of this difficulty, but only 0.22 of an inch of moisture was received during August, a critical month for a late crop.

Table 22.—*Corn production in the island and control areas, by tenure groups, 1929.* [1/]

Farm group	Average acreage		Average production		Percent reporting corn husked	Percent of cropland in corn
	Total	Husked	Total	Per acre		
	Acres	*Acres*	*Bushels*	*Bushels*	*Percent*	*Percent*
Full-owners:						
Island	23	18	460	25.6	89	26
Control group 1	20	20	366	18.3	87	35
Control group 2	18	18	263	14.6	89	37
Control group 3	25	25	308	12.3	83	47
Part-owners:						
Island	30	16	505	31.6	100	24
Control group 1	22	21	365	17.4	89	37
Control group 2	16	16	200	12.5	84	37
Control group 3	22	21	248	11.8	98	46
Croppers:						
Island	12	12	417	34.8	100	23
Control group 1	18	18	338	18.8	73	33
Control group 2	16	16	211	13.2	76	47
Control group 3	19	19	276	14.5	80	50
Other tenants:						
Island	19	18	382	21.2	100	34
Control group 1	17	17	321	18.9	95	35
Control group 2	16	16	193	12.1	93	48
Control group 3	20	20	259	13.0	89	50
All groups:						
Island	22	18	450	25.0	92	26
Control group 1	19	19	353	18.6	87	35
Control group 2	16	16	221	13.8	86	42
Control group 3	22	22	275	12.5	87	48

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

Table 23.--*Yield of corn per acre in Franklin County, 1899-1934.* [1/]

Year	Yield per acre
	Bushels
1899	19.3
1909	18.2
1919	21.5
1924	18.4
1929	16.7
1934	22.5

1/ Computed from census data.

Table 24.--*Precipitation at Tullahoma, Tennessee, 1929, 1934, average 1883-1930.* [1/]

Month	Precipitation		
	1929	1934	Average 1883-1930
	Inches	*Inches*	*Inches*
January	6.15	3.88	5.21
February	5.18	2.50	4.60
March	12.00	11.17	6.15
April	6.90	2.23	5.01
May	5.14	2.19	4.08
June	2.04	5.95	4.28
July	3.19	4.83	4.93
August	.22	3.97	4.09
September	6.37	4.99	3.18
October	4.91	1.77	3.18
November	7.23	3.42	3.73
December	4.11	3.69	5.66
Annual	63.44	50.15	54.10

1/ Data for 1929 and for the 1883-1930 average, from *Climatic Summary of the United States;* data for 1934 from U. S. Weather Bureau, Knoxville, Tenn.

As crop yields were no doubt influenced by the abnormal precipitation shown for 1929, it seems worth while to present the average yields of corn for the island and control groups in 1934 (table 25). Although rather sharp departures from average monthly rainfall also occurred in 1934, the record for

the 12-month period more nearly approximates a normal record. The German-Swiss again realized considerably greater yields per acre than did the farmers in the control groups. The *other tenants* in control group 1 realized slightly higher yields per acre than did the comparable group in the island.

Table 25.--*Yield of corn per acre for the island and control areas, by tenure groups, 1934.* 1/

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Bushels	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Island	37.8 2/	2/	35.8	23.3	35.5
Control group 1	30.8	3/	25.5	24.7	29.2
Control group 2	20.2	21.1	24.7	18.1	21.0
Control group 3	21.2	21.8	23.8	16.3	20.0

1/ Computed from agricultural schedules, Census of Agriculture, 1935, Bureau of the Census.

2/ As there were only two part-owners in the island their schedules were combined with those of full-owners, of which there were 24, making a total of 26 schedules.

3/ The two part-owner schedules were laid aside because there were already 42 schedules of full-owners; their inclusion would not have changed the yield per acre perceptibly.

Practices of dealing with the mature corn crop vary for different parts of the country. In the western part of the Corn Belt, stalks are usually left in the field after the corn is husked. In the East, corn stalks are frequently removed from the field and cover crops planted. In Tennessee, and other parts of the South, stalks are frequently cut off above the mature ear and stored as winter feed, and the corn is husked later in the field. In Franklin County are found what may, for the sake of convenience, be termed both the eastern and the southern methods. In the control areas, particularly 2 and 3, the southern method prevails almost exclusively, and in the island the eastern method is practiced with but few exceptions. In control group 1 both practices are followed by varying numbers of farmers.

Under the southern method where the lower stalks are left standing in the field all winter, the soil remains unused and unprotected, and erosion takes its heavy toll of top soil. The eastern method as practiced by the German-Swiss represents a more intense as well as a more approved use of the land. Removal of the whole stalks from the fields may serve several purposes. The stalks, which are usually shredded and put into a barn, provide feed for stock and litter for manure. The cleared fields can be immediately prepared for some form of winter crop which protects the soil from washing, may be pastured, and helps to diversify the farming activity.

It should not be assumed that the problem of erosion has ceased to exist among the German-Swiss farmers. Sheet erosion, in which soil removal is less apparent than in gullying, making it insidious, is found on some of their farms. In the areas in which most of the farmers in the island and control groups live, slopes are gradual, and by rather casual methods, soil

removal can be arrested and a crisis in the cycle of a field can be delayed for varying periods. The mantle rock is usually sufficiently deep so that productivity of slopes can be maintained by the generous use of manure and fertilizer, although soil removal is persistent. As reasonable care can maintain most of the soil, farmers in the county have not been convinced of the desirability of terracing and contour farming; clean-tilled crops run straight up and down all kinds of slopes. On newly plowed or cultivated fields, the pelting rains take off a huge amount of soil, even on minor slopes. Sooner or later this problem will have to be faced, and improved methods of farming will have to be instituted.

In the production of corn, Tennessee farmers have a substantial price advantage. On the basis of the average annual farm prices prevailing in the United States from 1910 to 1934, corn prices in Tennessee have been 10 percent above the average corn prices for the country. 116/ During recent years, 1930-34, the price advantage was even greater — 17 percent above the average for the country. Southward and eastward of Tennessee, the price differential becomes still greater, being in favor of the Cotton Belt States. These differentials, of course, are brought about by the one-sided farming program in the South; that is, the cotton farmer imports his plow and mule to work cotton and imports corn to feed himself and his mule. Even Franklin County imports corn to convert into corn meal. With better farming methods, corn production in the county could be doubled, without an increase in the present corn acreage

Winter Wheat.

Considerable quantities of wheat have been grown in Tennessee since pioneer days. Before the tide of immigrants in the North reached the interior of the country, particularly the trans-Mississippi area, wheat prices ranged fairly high, and Tennessee was among the foremost States in wheat production. 117/ Since the Civil War, wheat has been produced more economically in the North and West than in Tennessee; consequently, wheat-growing has declined in importance in this State. But high prices during the World War and for some years thereafter stimulated wheat production in the State. Some students of agriculture believe that Tennesseans have been more persistent in their wheat-growing activities than prices have warranted. 118/

If wheat production in Tennessee is uneconomical, then the German-Swiss might do well to realize this as they are the chief wheat growers in the county; 85 percent of them grew the crop in 1929 and on an average they devoted 29 percent of the cropland to it (Table 23). In control group 1 a similar percentage of cropland was in wheat. In control groups 2 and 3, little wheat was grown, most of the cropland being used for corn and cotton (table 5).

116/ Charles E. Allred, Paul T. Sant, and Craig M. Smith, *Regional Differences in Farm Price of Corn, Tennessee and United States*, Monograph No. 31, Agr. Exp. Sta., Univ. of Tenn., Knoxville, 1937, p. 3, Fig. 1.

117/ Edwin P. Conklin, "Agriculture", Chapter II in Hamer, *Tennessee--A History*, Vol. II, pp. 851-52.

118/ *Ibid.*, p. 852.

Table 26.--*Production of winter wheat in island and control areas, by tenure, 1929.*[1/]

Farm group	Percentage of farms reporting	Average acreage reported	Production		Percentage cropland in wheat
			Total	Per acre	
	Percent	*Acres*	*Bushels*	*Bushels*	*Percent*
Full-owners:					
Island	82	29	296	10.2	29
Control group 1	61	23	133	5.8	27
Control group 2	21	24	178	7.4	12
Control group 3	24	17	144	8.5	10
Part-owners:					
Island	100	38	591	15.6	31
Control group 1	89	20	168	8.4	32
Control group 2	16	21	124	5.9	9
Control group 3	39	16	126	7.9	13
Croppers:					
Island	x	x	x	x	x
Control group 1	82	17	138	8.1	34
Control group 2	8	15	108	7.2	5
Control group 3	31	16	130	8.1	16
Other tenants:					
Island	100	15	180	12.0	26
Control group 1	66	18	157	8.7	27
Control group 2	11	16	82	5.1	6
Control group 3	28	16	137	8.6	12
Total:					
Island	85	28	317	11.3	29
Control group 1	68	21	143	6.8	28
Control group 2	14	20	140	7.0	8
Control group 3	30	16	134	8.4	12

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

The German-Swiss show a higher yield of wheat per acre than do the control groups but the average of 11.3 bushels is not impressive. As with corn, excess precipitation early in 1929 served to reduce the yield per acre (table 27). Data for 1934 for the island and control groups show the following average per acre yield: island, 16.1 bushels; control group 1, 10.0 bushels; control group 2, 11.3 bushels; control group 3, 11.0 bushels. The higher yields for the German-Swiss were thus confirmed, although an average of 16.1 bushels per acre does not seem very good. Interviews brought out the fact that the good farmers in the island expect and usually get between 20 and 30 bushels of wheat per acre in average good years. Comparable yields in the control areas are highly exceptional.

It may seem somewhat strange that the German-Swiss devote over 25 percent of their cropland to wheat when land values are rather high in their community (about $100 per acre in 1929) and prices for wheat have been rather low since the World War. Wheat-growing is almost traditional with these people, and wheat is a good cover crop in winter, may be pastured, and is a good nurse crop for other grasses and legumes. The straw it provides is well utilized in bedding stock.

Tennessee farmers enjoy a relative price advantage over prominent wheat-producing States in the West. From 1927 to 1936, wheat prices in Tennessee were 30.8 percent higher than in Kansas, 29.7 percent higher than in North Dakota, and 29.3 percent higher than in Nebraska. This price difference roughly approximates shipping costs from surplus wheat-producing areas to importing areas. 119/

Table 27.--*Yield of wheat per acre in Franklin County, 1899-1934.* 1/

Year	Yield per acre
	Bushels
1899	9.9
1909	10.4
1919	10.4
1924	11.1
1929	8.6
1934	11.3

1/ Computed from census data.

Other Small Grains, Soybeans, and Cowpeas.

Oats, barley, rye, soybeans, and cowpeas have a relatively minor place in the farming program of Franklin County (table 28). The German-Swiss devote more acreage to these crops -- with the exception of cowpeas -- than do the farmers in the control areas. Small grains, as winter pastures and as nursing crops and to provide feed and straw, may well have a part in a program of diversified farming in the South.

In the production of oats, barley, and rye, Tennessee farmers have a considerable price advantage over the Middle West. For instance, from 1927 to 1936, prices for oats in Tennessee were on an average 51.6 percent higher than in Iowa. Barley was 54.4 percent higher, and rye was 46 percent higher. 120/

Hay Crops and Cloverseed

Varying emphasis is given to the production of various hays and cloverseed (mainly crimson cloverseed) by the German-Swiss and the control groups (table 29). The German-Swiss farmers again, in general, produce more and, on the whole, better hay.

119/ Charles E. Allred and Paul T. Sant, *Regional Variations in Farm Price of Small Grains, Tennessee and United States,* Monograph No. 55, Agr. Exp. Sta., Univ. of Tenn., Knoxville, 1937, pp. 11-13, particularly Fig. 8, p. 12.

120/ Allred and Sant, op. cit., pp. 14, 15, and 16.

Table 28.—*Production of oats, barley, rye, soybeans, and cowpeas in the island and control groups, 1929.* 1/

Crop and farm group	Percentage of farms reporting		Average all groups	
	Full- and part-owners	All groups	Acreage	Yield per acre
	Percent	*Percent*	*Acres*	*Bushels*
Oats:				
Island	35 (x)	31	6	24
Control group 1	12 (x)	12	4	38
Control group 2	x 2/	x	x	x
Control group 3	3	2	5	11
Barley:				
Island	22 (x)	25	11	22
Control group 1	6	4	8	11
Control group 2	x	4	6	18
Control group 3	x	x	x	x
Rye:				
Island	x	8	6	10
Control group 1	7 (x)	6	11	5
Control group 2	--	--	--	--
Control group 3	x	x	x	x
Soybeans, alone or with other crops:				
Island	29	28	7	
Control group 1	22 (x)	24	8	
Control group 2	20	20	8	
Control group 3	13	20	7	
Cowpeas, alone or with other crops:				
Island	13	13	6	
Control group 1	20	27	9	
Control group 2	--	--	--	
Control group 3	x	1	4	

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ "X" indicates that fewer than three farmers reported; (x) after a figure indicates that they are not included for one tenure group; "x" quantities are included in totals where totals are given.

As alfalfa is generally conceded to be the best hay for growing stock and milk cows, its availability to a stock farmer is desirable. About 44 percent of the German-Swiss reported an average of 13 acres of alfalfa each for 1929 whereas only about 3 percent of the farmers in control group 2 reported an average of 5 acres each.

The German-Swiss were fully aware of the merits of alfalfa before they came to Franklin County, for in Switzerland and the Palatinate this hay had been grown for centuries. This may partly account for the emphasis they still give to the growing of alfalfa but the extent to which it is grown may also be a measure of the thoroughness of the farming techniques that are used. For although the soil in the island and control areas was derived from limestone, it is acid in reaction and is deficient in plant food. To grow alfalfa requires a liberal application of lime and other soil amendments need to be made. The liberal use of manure is desirable, and careful seed bed preparation is essential. It need hardly be said that these thorough methods are not very common among cotton farmers or even in the more diversified farming sections on the edges of the Cotton Belt, as in Franklin County. 121/

Franklin County is the leading crimson cloverseed-producing county in this country. Table 29 shows the emphasis that was given to this crop in 1929 by the farmers in the island and the various control groups. The German-Swiss were the first to grow crimson clover in the county and they have continued to maintain this leadership. The considerable acreage of crimson clover turned under in spring is not shown in the table.

In 1929 the yields of crimson cloverseed were lower than usual, ranging from less than 2 to about 3½ bushels an acre (table 29). Abnormal precipitation in the early months of 1929 mainly accounts for the low yields shown. Yields between 6 and 10 bushels an acre are much more common. Prices for the seed generally range between $5 and $10 per bushel.

Cotton

Cotton production has never dominated the agricultural enterprise of Franklin County. Many of the pioneers came from cotton-growing sections in Virginia and North Carolina, but circumstances in their new home prevented them from adopting an unvaried cotton-corn program of farming. In the early days of the county, transportation difficulties hindered the marketing of the bulky bales, and so a corn-and-stock program was followed. Even with the coming of the railroads during the 1850's, cotton culture did not displace

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121/ It should not be assumed from these statements that alfalfa can be grown successfully in all parts of the South, even with the best of care and farming methods. The soils of the Coastal Plains as well as those of the Piedmont are poorly adapted for the growth of this plant. Alfalfa thrives best in semiarid and arid sections where an abundance of water is made available through irrigation. See H. L. Westover, *Growing Alfalfa*, Farmers' Bulletin No. 1722, U. S. Dept. of Agr., 1934, p. 7, and J. F. Cox and C. R. Megee, *Alfalfa*, pp. 26-27.

Table 29.—*Production of hay crops and cloverseeds by island and control groups, 1929.* [1/]

Crop and farm group	Percentage of farms reporting		Average all groups	
	Full- and part-owners	All groups	Acreage	Total yield per farm reporting
	Percent	*Percent*	*Acres*	*Tons*
Alfalfa:				
Island	39	44	13	28
Control group 1	10	16	8	15
Control group 2	6	3	5	14
Control group 3	5	3	6	11
Timothy: [2/]				
Island	16	16	11	13
Control group 1	—	—	—	—
Control group 2	4	3	15	16
Control group 3	7	6	13	13
Red, alsike, and mammoth clovers:				
Island	29	31	16	24
Control group 1	13	12	11	17
Control group 2	4	5	15	10
Control group 3	8	8	6	7
Sweet, crimson, and Japan clover (lespedeza):				
Island	x	x	x	x
Control group 1	—	—	—	—
Control group 2	9	8	8	4
Control group 3	—	x	x	x
Annual legumes saved for hay: [3/]				
Island	29	28	8	7
Control group 1	49	49	9	8
Control group 2	37	25	8	7
Control group 3	53	41	7	8
Other tame and cultivated grasses:				
Island	58	54	14	17
Control group 1	35	33	9	7
Control group 2	8	8	11	11
Control group 3	29	27	7	4
	Percent	*Percent*	*Acres*	*Bushels*
Cloverseeds:				
Island	68	69	12	37
Control group 1	33	29	9	31
Control group 2	x	2	15	24
Control group 3	12	10	10	31

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

2/ Timothy or timothy and clover mixed.

3/ Soybeans, cowpeas, peanuts, velvet beans, Canada peas, and vetches.

other farming activities. Cotton growing did not expand in the county until the period of the World War (table 30). Careful study suggests that other factors, particularly the physical environment and the climate of Franklin County helped to maintain a program of farming in which cotton had a minor part.

Table 30.—*Acreage, production and yield per acre of cotton in Franklin County, census years 1839-1934.* 1/

Year	Amount produced	Acreage	Yield per acre
	Bales	*Acres*	*Bales*
1839	780	—	—
1849	637	—	—
1859	163	—	—
1869	289	—	—
1879	171	414	0.41
1889	113	758	.15
1899	29	102	.28
1909	184	726	.25
1919	1,385	3,214	.43
1924	1,835	5,414	.34
1929	3,286	9,102	.36
1934	3,911	6,734	.58

1/ Data secured from Census reports. Production for 1839, reported as 311,818 pounds, has been converted to bales of 400 pounds to agree with 1849, 1858, and 1869; 1879 and following years are bales of 500 pounds.

General accounts of the South frequently make the Cotton Belt almost co-extensive with "Dixie", which lies south of the Mason and Dixon Line. Thus a frontispiece map in *Economic History of American Agriculture* by Ernest O. Bogart places all of Tennessee and even southern Kentucky in the Cotton Belt. Little cotton is produced in eastern Tennessee and, on the whole, only relatively small quantities are produced in central Tennessee. In this State, only the Mississippi Lowlands and Coastal Plains area and, with diminishing significance, the lowlands in the southern tier of counties extending eastward from these sections may be well called a part of the real Cotton Belt. The Central Basin of the State contains small outliers of the Cotton Belt, which may be said to expand and contract in response to varied complicated factors. 122/ In Franklin County, the Cotton Belt -- or near Cotton Belt -- comes to an abrupt stop at the Cumberland Plateau, which lies about 800 feet above the adjacent lowlands. The northern line of the Cotton Belt includes that area where the growing season approximates 200 days and the prevailing summer temperature approaches 77° F. Along this line the transition from no cotton to cotton farming is rather abrupt, increasing frequently from 20 to 30 percent, in terms of cropland harvested, within the width of a single county.

Although Franklin County -- excluding the plateau section -- is considered to lie partly in the 200-day frost-free belt of the United States, the growing season is by no means consistent in length, and growing seasons

122/ See Plate 142A in *Atlas of the Historical Geography of the United States* and a map of the Cotton Belt on p. 66, Vol. III (1927), of *Economic Geography*.

frequently are not so long. No data exist on the growing season in Franklin County, but such data are available for Tullahoma, a town 16 miles north of Winchester. 123/ The frost data for Tullahoma herewith considered cover the years from 1894 to 1930, during which period the growing season has equaled or exceeded the 200-day period only 11 times. The average length of the growing season for the period was 191 days (median, 189). In 1906, the frost-free season was the shortest on record — 154 days. Obviously, a crop that requires 200 days to mature would frequently suffer from late or early frosts in this section. Before the period of the World War, early-maturing varieties of cotton were not available to minimize the frost hazard. Moreover, techniques of pushing cotton with certain fertilizers were largely unknown or not practiced. That frosts damaged growing cotton on occasions in the southern tier of counties in central Tennessee is attested by several cotton growers quoted in James M. Safford's *Report on the Cotton Production of the State of Tennessee* (1884). 124/

It follows that a frequently inadequate growing season may have discouraged the more general production of cotton in Franklin County before the World War. Rainfall in the county approaches an annual average of 50 inches a year and certainly presents no unusual problems. 125/ The limestone soil in the county is, it would seem, better than average soil in the South.

A permissive factor in the recent expansion of cotton growing in Franklin County is the introduction of early-maturing varieties. By the use of these varieties and with the aid of some pushing fertilizer the frost hazard has been largely overcome. 126/ The ravages of the boll weevil in the Cotton Belt proper also contributed directly and indirectly to an expansion of this culture northward. As the weevil is no problem in Tennessee, growers in this State have an advantage over those in badly infested areas.

The most compelling factor in the increased cotton acreage was, no doubt, the prices brought by the World War. From 1908 to 1919 the average cotton price for farmers had increased nearly 300 percent (9.01 cents to 35.41 cents), 127/ and the prospect of quick and liberal returns attracted many farmers to cotton production. Although cotton prices declined considerably during the 1920's, they remained easily twice as high as the prices that prevailed during the 1880's, the 1890's, and the first decade of the present century.

123/ The elevation of Tullahoma is 1,075 feet, according to the *Climatic Summary of the United States*, Section 76 (Western Tennessee). That of Winchester is about 990 feet according to the Decherd Quadrangle (1926), U. S. Geological Survey, Department of the Interior.

124/ Published by the Government Printing Office for the Census Office, Department of the Interior (1884).

125/ Precipitation data are published for Sewanee, Tennessee (in Franklin County), but since this town is located on the Cumberland Plateau (1,950 feet elevation), its rainfall record (annual average of 55.72 inches from 1860 to 1930, gathered intermittently) may well exceed the average for the county as a whole. The average annual precipitation recorded in Fayetteville, Tennessee (Lincoln County, adjoining Franklin County on the west), is 48.52 inches (1883 to 1930, gathered intermittently). Both records are taken from *Climatic Summary of the United States*.

126/ According to Prof. M. I Hancock, Assistant Agronomist, Agricultural Experiment Station, University of Tennessee, cotton may now be grown as far north in east Tennessee as Morristown (35 miles northeast of Knoxville). In his opinion, high labor costs at present exclude cotton culture from this section of the State. (Interview, September 1, 1938, Knoxville, Tennessee.)

127/ *Agricultural Statistics*, 1937, op. cit., pp. 88, 89.

During the years of relatively high prices for cotton and extensive cotton production, individual and community techniques dealing with this enterprise were improved. Low prices for cotton have prevailed during recent years, but the cotton-farming program which was given direction in the previous two decades has already worn grooves that seem compelling in their influence. Farmers accept money in a crop-curtailment program, but the restraint apparently does not please them -- they would like to plant more cotton and get more money. In the light of their disastrously low incomes in recent years, this feeling and desire may be understood but if they should continue to go in the present direction they may, perhaps, be criticized.

As the German-Swiss have not adopted a cotton program, but have maintained their program of diversification and stock raising, the question arises, Why this divergence in farming practice between the island and the control groups, particularly control groups 2 and 3?

Before the causes are explored, it may be well to consider briefly the data presented in table 31. None of the part-owners or other tenants in the island raised cotton in 1929, whereas as many as 96 percent of the part-owners in control group 2 raised it. Of all the German-Swiss, 26 percent reported an average of 2 acres of cotton. Interviews disclosed, however, that only a few families raise cotton themselves; with the others, the patch is on a little ground that is turned over to Negro helpers who supplement their income by raising a little cotton. Questioning of the German-Swiss about their cotton-raising activities brought indifferent or amused replies. One man said he was 65 years old before he tried to raise a small patch of cotton, just as an experiment. Another elderly farmer replied, "No, I never fooled with the stuff."

The cotton produced in the control groups is part of a regular farming program, receiving the direct attention of the owner or renter. On the whole, however, the average acreage devoted to cotton is small; the farmers in the county do not allot a disproportionate acreage to an enterprise that results in staggering surpluses for the country as a whole. It should, therefore, be clearly understood that the mere acreage devoted to cotton in Franklin County, or, more particularly, in the control groups is not here criticized.

Table 31 also shows rather clearly the unlike farming practices that prevail among the farmers in the island and the control groups. Less than 1 percent of the cropland of the German-Swiss was planted to cotton in 1929, whereas the farmers in control group 2 planted 24 percent of their land to it. Land devoted to cotton and corn is in danger of serious erosion, unless special precautions are taken. Whereas a little more than 25 percent of the cropland of the German-Swiss farms was in cotton and corn in 1929, nearly two thirds of the cropland in control groups 2 and 3 was devoted to these crops. The German-Swiss usually plant cover crops in their corn field during the winter; the farmers in control groups 2 and 3 usually do not. The combined average of land in cotton, corn, and wheat - the latter protects the soil during the winter -- accounts for nearly three fourths of the cropland in the control groups but for only 56 percent of the cropland in the island, substantiating the greater diversification noted in the island than in the control groups.

Table 31.--*Cotton production and percentage of land in cotton, corn, and wheat in the island and control areas, by tenure groups, 1929* 1/

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage of farms reporting:					
Island	30	--	x	--	26
Control group 1	33	x	37	45	34
Control group 2	83	96	77	74	80
Control group 3	73	88	64	70	73
Percentage of cropland in cotton:					
Island	1	--	x	--	1
Control group 1	5	x	6	8	5
Control group 2	21	23	31	23	24
Control group 3	17	18	15	17	17
Percentage of cropland in cotton and corn:					
Island	27	24	23	34	27
Control group 1	40	37	39	43	40
Control group 2	58	60	77	71	65
Control group 3	64	64	64	67	64
Percentage of cropland in cotton, corn, and wheat:					
Island	55	55	23	59	56
Control group 1	67	68	72	70	68
Control group 2	69	69	82	77	73
Control group 3	74	77	80	79	76
	Acres	*Acres*	*Acres*	*Acres*	*Acres*
Acreage:					
Island	3	--	x	--	2
Control group 1	8	x	7	7	7
Control group 2	11	9	10	10	10
Control group 3	10	9	7	9	9
	Bales	*Bales*	*Bales*	*Bales*	*Bales*
Bales.					
Island	1	--	x	--	1
Control group 1	3	x	4	3	3
Control group 2	4	3	4	3	4
Control group 3	3	3	3	3	3

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

The questions of why the cotton growers in Franklin County persist in growing this crop in spite of low prices, and why little cotton is grown in the German-Swiss community were discussed with many farmers in the county. To the first question, the following answers were made most frequently:

"We need a cash crop we can count on."
"Cotton is raised on poor land, land that won't raise much of anything else."
"We can get a seed and fertilizer loan on a cotton crop."
"Cotton is raised by tenants on poor land and not by owners with good land." (Not true. See table 31).
"The landlord wants us to raise cotton."
"We haven't the tools and the stock to farm like the German-Swiss."
"The growing cotton provides work for the children during summer."

In the light of data already presented and from observations in the field, generalizations may be made which supply at least partial answers to the questions raised. In the first place, the smaller average-sized farms in the control groups need to be used somewhat more intensively to sustain the operators than the larger farms in the island. Cotton production, as carried on, requires much hand labor and should yield relatively high returns per acre farmed. It does not require expensive machinery and barnyard manure is not essential for its growth. The higher percentage of tenants in the control groups and on small farms explains partly why at least they might find it expedient or necessary to raise cotton, but it is to be remembered that more owners than tenants report cotton (table 31).

Important among reasons given for raising cotton is the reply that "cotton is raised on poor land, land that won't raise much of anything else". This statement does not hold for all cotton fields, but it applies to enough to indict the cotton system as it is practiced.

Here is the answer the average farmer has given to the problem of poor land — land that has been abused for several generations. Instead of devising techniques to repair and build up the abused land by diversifying crops, planting cover crops, and applying manure, the farmer borrows money to buy fertilizer, in order to drug the land to get whatever cotton it will produce. Few cash crops will tolerate as poor land as will cotton. At present the crop-control program exerts pressure to counteract this tendency.

Another reason for the expansion of cotton growing in the county since the World War relates to the fact that here, as in many other places, a largely self-sufficing economy has been gradually changed into a more demanding cash economy. Taxes on real estate have more than doubled during the last several decades. Telephones and automobiles have come into more common use, and automobiles burn gas. (State and Federal taxes on gasoline in Tennessee amount to 8 cents, 7 cents of which is a State tax.) The Tennessee Valley Authority has brought electricity to most of the farm homes, and although rates are comparatively low, something must be sold to pay the monthly bill. Consolidated schools have largely replaced local schools. Clothes that might have served in a neighborhood school are worn only under protest to a larger town school and children who make a daily trip to town usually demand some spending money.

These observations are made not in criticism of the people or the changes they signify, but merely to point out that times have changed. These changes, in turn, have been partly translated into their farming program which seeks to gain the greatest possible cash returns in a short time.

The difference in the farming program of the German-Swiss and the control groups with reference to cotton production in recent years illustrates most emphatically, it seems, the significance of the cultural factor or cultural conditioning. The one group was familiar with soil-conserving practices from the very start, and has consistently maintained fertility by a diversified farming program. The other groups (particularly the unmodified farming groups in control areas 2 and 3) were conditioned by the prevailing farming methods of the South, and, unless modified from without, tend to continue in their "soil-mining" methods. Part of this may be ascribed to lack of familiarity with more approved methods of farming, part of it to mere inertia with reference to adopting a better farming program, for, to keep more stock and to diversify more means more work, winter and summer.

Potatoes.

Franklin County's location in relation to the northern states and the Gulf Coastal section places it in a position to realize seasonal price advantages on its potato crops, although this does not mean that prices are usually high or even very profitable. Potatoes can be planted in February and March and be ready for harvest in June or July. By this time the early potatoes grown in the Gulf Coast section have been marketed, and northern buyers are prepared to buy new potatoes from the next nearest producing section. Later in the growing season, northern potatoes are placed on the southern market, particularly in the deeper South or Cotton Belt proper, at which time potatoes from Franklin County are shipped south. The intermediary position of the county gives it an advantage over both the more northern and the more southern producers with respect to transportation costs.

Recurrent and random attempts to grow potatoes on a commercial scale in Franklin County were made from the 1870's forward. The present program of large-scale production is said to have been started in 1924 by Ben Heikens of Decherd, and it has since been fostered by him,[128] the main expansion occurring since 1930. During recent years, around 300 carloads of potatoes have been shipped from the county, most of them to southern markets.

Although the main potato-growing section in Franklin County seems to be centered around Decherd,[129] growers are also found in the island and in all the control areas. Data presented in tables 32 and 33 on potato production in 1929 and 1934 must be considered with this fact in mind. As control group 3 (in district 9) is located nearest to Decherd, potato-growing might be expected to be more important in this section than in the island or control group 1 (district 5) and control group 2 (district 4). On the whole, however, more white potatoes and sweetpotatoes were produced per farm in the island in 1929 and in 1934 than in any of the control groups.

128/ Mr. Heikens' father, I. H. Heikens, was of German extraction. He earned his first money on Iowa farms and moved to Franklin County in the 1870's. On his farm near Decherd he has carried on many and varied experiments with diversification of crops and stock raising. Since Ben Heikens' farm is located near Decherd, he is not included in the island or any of the control groups.

129/ See fig. 1, p. 6.

Table 32.--*Potato production in the island and control areas, by tenure groups, 1929* [1]

Crop and farm group	Percentage of farms reporting					Average production reported				
	Full owners	Part owners	Croppers	Other tenants	Total	Full owners	Part owners	Croppers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Bushels*	*Bushels*	*Bushels*	*Bushels*	*Bushels*
Irish potatoes:										
Island	97	100	x	80	93	69	145	x	39	71
Control group 1	89	100	x	67	76	25	23	x	23	25
Control group 2	89	96	73	79	83	75	26	18	20	40
Control group 3	82	84	22	59	63	49	47	53	74	54
Sweetpotatoes:										
Island	70	75	x	60	69	67	50	x	20	59
Control group 1	72	89	x	67	64	26	39	x	43	32
Control group 2	74	80	48	64	65	36	20	16	17	25
Control group 3	38	35	13	18	27	29	27	29	42	30

1/ Computed from agricultural schedules Census of 1930, Bureau of the Census.

The small percentage of tenants that raised potatoes in 1929 is of interest (table 32). It would seem that since these tenure groups are the least able to spend money, they would raise this almost essential food.

Between 1929 and 1934 the quantity of potatoes produced in the island and control groups increased, particularly in the island. In control group 2 the number of farmers growing white potatoes decreased. An abundant local supply of potatoes seems actually to have discouraged these farmers from raising them for their own needs.

To produce good marketable potatoes in Franklin County a liberal application of fertilizer is necessary. "This builds up the land and puts it in good shape for a follow-up crop" producers say. The potatoes are expected to pay for the fertilizer, yield a profit, and prepare the field for several good yields of succeeding other crops. Many farmers prepare their fields in this manner for alfalfa. During interviews this advantage was frequently mentioned. As less alfalfa has been grown in the control areas it would seem that it is in these areas that the adoption of alfalfa production would be most pronounced. But the alfalfa acreage, as reported in the Census of Agriculture, 1935, revealed that from 0.3 to 7.5 percent for the control groups, whereas for the island it was 14.5 percent.

Table 33.--*Potato production in island and control areas, 1934.* 1/

Farm group	Irish potatoes		Sweetpotatoes	
	Percentage of farms reporting	Average production reported	Percentage of farms reporting	Average production reported
	Percent	*Bushels*	*Percent*	*Bushels*
Island	93	217	57	242
Control group 1	83	87	70	37
Control group 2	58	65	45	34
Control group 3	82	141	60	37

1/ Computed from agricultural schedules, Census of Agriculture, 1935, Bureau of the Census.

Prices for white potatoes are generally higher in the Southern States than in Western and Northern States. From 1927 to 1936, average prices for these potatoes ranged from 34 to 51 percent higher in Alabama, Georgia, and South Carolina than average prices for the country as a whole. Tennessee prices were nearly 34 percent higher. 130/ Obviously, Franklin County's proximity to the Cotton Belt proper places it in an advantageous position to profit from the southern market for white potatoes.

130/ Charles E. Allred et al., *Regional Differences in Farm Price of Irish Potatoes and Sweet Potatoes, Tennessee and United States*, Monograph 56, Agr. Exp. Sta., Univ. of Tenn., Knoxville, 1937, p. 6.

In relation to the sweetpotato market, Tennessee is also well placed. Most sweetpotatoes are produced in the Gulf and South Atlantic States, and move to the northern markets to which Tennessee is closer than many other producing States. From 1927 to 1936, average prices for these potatoes were from 4 to nearly 7 percent higher in Tennessee than in South Carolina, Georgia, and Mississippi.[131]

Vegetables, Fruit Trees, and Grape Vines.

Item 198 on the general farm schedule of the 1930 Census reads: "Value of farm garden vegetables grown in 1929 for home use only (omit white potatoes and sweet potatoes)." The average figures derived from the estimates placed on the individual schedules for the island and the control groups are shown in table 34. More farmers in the island than in the control groups reported value of vegetables grown, and they also reported a higher value for these vegetables. In control group 3, only 56 percent of the croppers reported vegetables grown, whereas the same figure for the island is 100 percent. The question may be raised, Are renters in the South tenants because they raise no vegetables, or don't they raise vegetables because they are tenants? The question suggests that a serious problem exists.[132]

Several informed citizens in the county thought that there was an even greater dissimilarity in the garden resources of these various groups than is reflected in table 34, but no attempt need be made to reappraise the situation. Among the German-Swiss many products are canned. Some had nearly 700 quarts of canned food in their cellars in the fall of 1937. In the control areas, some housewives equal this record, but the practice is not nearly so general. Many of the houses in the control areas do not even have cellars. In the middle and latter part of the summer many gardens in the control areas had already become mere weed patches. This situation was not nearly so common in the island nor on many of the better farms in the county.

Field study in a number of places in the South indicates that this section is realizing a major transformation in its garden and canning program, largely due to the efforts of home demonstration agents who have been responsible for remarkable progress in this direction. Although farm income has sunk to disastrously low levels in recent years, many who are familiar with the situation have declared that the garden-canning program has enabled many farmers, particularly tenants, to eat better and more wholesome food than ever before.

The distribution of fruit trees and grape vines (table 34) is of interest with respect to the standard of living prevailing in the various groups, particularly the tenant groups. Fruit trees and grape vines are least common on the farm places of croppers and *other tenants*. Curiously, the few croppers (13 percent) reporting fruit trees in control group 2 report the highest average number of trees. This is a striking departure from what is usually found on cropper farms. On the whole, Franklin County is better supplied with fruit trees than are many or, perhaps, most counties of this country. Commercial production of fruit is still very limited here, but seems

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131/ Charles E. Allred et al. Op. cit., p. 23.

132/ J. Russell Smith points out that in a climate that grows a "riotous plenty" of vegetables (the Cotton Belt), the prevailing diet lacks greens, vitamins, and milk. *North America*, p. 261. Vance, in his *Human Geography of the South*, gives attention to the inadequacy of the Southern diet. (See pp. 411-41.)

Table 34.--*Value of vegetables grown and number of fruit trees and grape vines reported in island and control groups, by tenure groups* [1/] [2/]

Farm group	Percentage of farms reporting					Average value or number reported				
	Full owners	Part. owners	Crop-pers	Other tenants	Total	Full owners	Part owners	Crop-pers	Other tenants	Total
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Value of vegetables grown:										
Island	97	100	100	100	97	78	78	60	74	76
Control group 1	100	100	73	95	95	61	66	37	66	60
Control group 2	90	100	86	85	89	54	51	48	46	50
Control group 3	100	100	56	85	86	50	49	28	35	43
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Number*	*Number*	*Number*	*Number*	*Number*
Fruit trees:										
Island	89	100	100	100	93	57	48	31	25	49
Control group 1	100	100	64	84	92	45	40	65	24	42
Control group 2	72	64	13	40	46	53	32	80	39	48
Control group 3	87	86	37	65	70	36	49	21	20	34
Grape vines:										
Island	85	100	100	60	85	20	31	5	19	20
Control group 1	83	78	x	50	67	16	10	x	5	14
Control group 2	57	56	7	21	33	10	10	20	9	10
Control group 3	76	76	18	35	53	11	9	9	8	10

1/ Value of vegetables grown, 1929; and number of fruit trees and grape vines reported, April 1, 1930.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

to have possibilities. Many citizens say that at one time there were an exceedingly large number of peach and apple orchards in the county, and that much of the fruit was converted into brandy in local distilleries. Pests have ruined the trees, but most pests can be controlled.

In former years, every German-Swiss family made its customary wine from grapes raised on the place. Among the younger generation this practice is less common.

4. VALUE OF PRODUCTS SOLD, TRADED, OR USED, 1929

Of the many facets of the problems of the South, probably the most serious lies in the low incomes that are so prevalent. If the per capita income in the South could be raised substantially, many of the other problems, it might be argued, would be conquered.

Studies of agricultural income that have been made in recent years in the South are largely based on the questions regarding the "value of products sold or traded" which appeared on the general farm schedules of the fifteenth census (1930). The averages derived from reported figures have been used both critically and naively, principally the latter way, according to many agricultural statisticians. So serious has been the criticism of these data that only the question on "value of forest products sold" was retained, and questions on value of field crops, livestock, livestock products, and products produced and consumed were not repeated on the tentative schedule drawn up for 1940 and sent out to about 100,000 farmers in a preliminary experiment. In spite of the faults found with the 1930 data, these figures have been used, in some way, in nearly all subsequent farm-income estimates. These preliminary observations are made merely to indicate that imperfections of the data on value of products sold or traded are realized. The data are presented for whatever relative value they may have. No attempt will be made to modify them in accordance with some perfecting theories. These estimates represent gross receipts; non-farm income was excluded.

Crops Sold or Traded

The estimated value of the grain, cotton, tobacco, vegetables, fruits, plants, flowers, and all other crops grown in 1929 that were sold or traded by farmers in the island and control groups are shown in table 35. "Products consumed on the farm for seed, feed, family use, or any other purpose" are not included. The German-Swiss, who give emphasis to raising and fattening stock and to the production of farm produce, managed to sell many field crops, and as a group obtained about twice as much income from them as the farmers in the control areas. Farmers in the control areas keep less stock and devote most of their land to cotton and corn (tables 18, 19, and 31). For these groups, corn and cotton, particularly the latter, must represent the principal cash crops.

Table 35.--*Value of crops* [1] *sold or traded in the island and control areas, by tenure groups, 1929.* [2]

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage reporting:					
Island	96	100	100	100	98
Control group 1	89	100	91	100	93
Control group 2	92	96	83	89	89
Control group 3	90	96	89	87	91
Percentage of total value of products sold, traded, or used:					
Island	33	22	47	36	31
Control group 1	27	34	60	40	32
Control group 2	34	34	43	38	37
Control group 3	42	48	55	52	48
Amount reported	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Average:					
Island	828	1,203	753	493	818
Control group 1	397	429	439	353	396
Control group 2	438	329	355	288	364
Control group 3	399	441	338	428	499
Median:					
Island	729	1,164	740	480	---
Control group 1	200	305	427	312	---
Control group 2	300	300	315	220	---
Control group 3	350	405	225	325	---

1/ Includes grains, cotton, tobacco, hay, vegetables, fruits, plants, flowers, and all other crops grown in 1929.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

That the farming program of the German-Swiss is more varied than that prevailing in the control areas is indicated in table 35. Although field crops brought about one-third of the gross income of the people in 1929, these crops represented nearly half the value of the products produced, sold, traded, or consumed by control group 3. The other two groups fall into an intermediary position (table 35).

Livestock Sold or Traded

As table 36 shows, 90 percent of the German Swiss realized an income from livestock, whereas only 66 percent of the farmers in control group 3 sold or traded livestock. An even greater discrepancy in income from this source appears between the croppers in the island and in control group 3 (100 against 33 percent). Particularly striking is the high gross value of the stock sold or traded by the part-owners in the island. A high percentage of this income was realized from fattening hogs, sheep, and cattle, particularly cattle. Some of this stock was bought for feeding purposes, and so the net return is smaller than the figure listed. 133/ These leading feeders (part-owners) in the island stand out in every farming activity. They sold great quantities of field crops (table 35) and they stand out in the quantity of produce sold (table 37).

Livestock Products Sold or Traded

In previous tables it was shown that the German-Swiss farmers sold more butterfat, wool, poultry, and eggs than did the farmers in the control areas. The gross income realized from the disposition of these products is given in table 37. It will be noted that 100 percent of the farmers in the island sold or traded livestock products, but that only 75 percent of all farmers in control group 3 had income from these products. Only about half (49 percent) of the croppers in control group 3 sold products of this kind. A very considerable portion of the income of the German Swiss farmers was realized from these sales.

The lower part of table 37 gives significant data. The German-Swiss obtained more than half their gross income (including products produced and consumed) from the sale and exchange of livestock and livestock products. Control groups 2 and 3, on the other hand, received only 25 and 21 percent, respectively, from the sale and exchange of these products. But these control groups received a relatively much greater percentage of their gross income from the disposition of field crops (37 and 48 percent, respectively) (table 35). The physical environment of the groups is comparable, and for all groups the economic factor or incentive, as the term is used and understood in farm management, is the same. The only fundamental difference or distinction between these groups lies in the cultural background. This difference has expressed itself in unlike types of farming, as the term is understood by students of agriculture.

Students of farm management and farm economics have written rather extensively on types of farms. The term "type of farm" is used to characterize a method or pattern of farming according to the emphasis given to the production of one, several, or various products. Thus, there are dairy farms, wheat farms, fruit farms, stock farms, and others. To place these various

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133/ It should be recalled that five schedules were laid aside from districts 4 and 9 (control groups 2 and 3) under the heading "stock traders" (see p. 51). These farmers reported many hundreds of head of stock as bought and sold, but reported almost no permanent stock and practically no crops harvested. It was clearly apparent that they carried on little or no general farming activity.

Table 36.--*Value of livestock sold or traded in the island and control areas, by tenure groups, 1929.* 1/

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage reporting:					
Island	85	100	100	100	90
Control group 1	87	100	46	83	82
Control group 2	85	80	56	70	72
Control group 3	78	88	33	63	66
Percentage of total value of products sold, traded, or used:					
Island	34	54	14	24	36
Control group 1	31	20	10	12	24
Control group 2	20	12	8	10	14
Control group 3	16	12	5	11	12
Amount reported	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Average:					
Island	950	2,915	220	325	1,023
Control group 1	463	253	146	131	340
Control group 2	279	139	94	96	174
Control group 3	179	125	85	120	140
Median:					
Island	500	2,135	179	290	---
Control group 1	210	225	187	90	---
Control group 2	105	62	42	50	---
Control group 3	108	80	46	80	---

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

enterprises in an understandable picture, students of these subjects write of "factors that determine the type of farming" 134/ or the "relation of physical and economic factors to the geographic distribution of types of farming." 135/ The types are explained almost entirely in terms of physical and economic determinants. Physical determinants are usually discussed under the headings of climate, soil, topography, and biological factors. Economic determinants usually deal with supply and demand, transportation and distance to market, price of land, labor supply, and similar considerations. Warren, in his *Farm Management*, also mentions "customs" and "personal desires of the farmer"

134/ Warren, G. F., *Farm Management*, pp. 48 ff.

135/ Elliott, Foster F., *Types of Farming in the United States*, Ch. V, pp. 121-58.

Table 37.—*Value of livestock products* [1] *sold or traded in the island and control areas, by tenure groups, 1929.* [2]

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage reporting:					
Island	100	100	100	100	100
Control group 1	98	100	64	83	91
Control group 2	96	92	78	89	87
Control group 3	87	86	49	76	75
Percentage of total value of products sold, traded, or used:					
Island	18	13	24	19	17
Control group 1	18	19	9	15	17
Control group 2	12	13	10	11	11
Control group 3	10	11	4	9	9
Percentage of total value of products sold, traded, or used obtained from livestock products and livestock combined:					
Island	52	67	38	43	53
Control group 1	49	39	19	27	41
Control group 2	32	25	18	21	25
Control group 3	26	23	9	20	21
Amount reported	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Average:					
Island	437	720	388	267	441
Control group 1	237	236	94	166	210
Control group 2	148	129	84	82	112
Control group 3	95	111	47	79	88
Median:					
Island	350	627	375	160	——
Control group 1	200	196	75	100	——
Control group 2	95	80	75	55	——
Control group 3	70	44	33	45	——

1/ Includes milk, cream, butter, butterfat, meat, poultry, eggs, honey, wool, mohair, etc.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

as related to the types of farming carried on. However, he points out that "the personal likes and dislikes of the farmer are often thought of as the most important considerations, but they are usually minor factors in determining the types of farming." Several of the writers make mere mention of personal likes and dislikes. The term is used, it seems, to connote individual differences in terms of talents, ambitions, peculiarities, and predilections instead of signifying a cultural residue or imprint. 136/

Apparently writers in the fields of farm economics and farm management might do well to revise and elaborate the basic considerations which, they say, express themselves in farming types. The traditional physical and economic determinants certainly fail to explain the distinction in farm types as shown in table 37. The difference rests on a cultural basis. Some additional cultural islands in the South, which clearly demonstrate the significance of the cultural background in farming types, may be found in Lauderdale, Cullman, and Baldwin Counties, Alabama; Warren and New Hanover Counties, North Carolina; and Lawrence, Grundy, and Morgan Counties, Tennessee. Numerous other islands are to be found in Louisiana, Texas, and neighboring States.

Forest Products Sold

On the general farm schedule of the fifteenth census, forest products are subdivided into sawlogs and veneer logs, firewood, pulp wood, fence posts, railroad ties, and poles or piling. Under the "value of products" questions, bark, turpentine, and gum are also mentioned. On most schedules the questions regarding forest products were not filled out properly, and so the schedules do not reveal what form of forest products brought most of the income, but it seems that most was realized from sawlogs, railroad ties, and some fence posts and firewood.

In control group 2, 90 percent of the farmers reported the sale of forest products in 1929, a percentage highly disproportionate with the other figures listed. A number of sawmills were unusually active in district 4 (control group 2) at this time and gave rise to what may be termed a rather sporadic activity and income. Available trees have already disappeared, for the most part, and this activity and income will decline to a level more nearly in keeping with that prevailing in the other groups for which data are presented. (Table 38.)

It should be recalled that the farmers in control group 2 had slightly less available cropland than did the farmers in the island and control group 3 (58 against 66 percent -- table 11). Various comparisons in activity and income may, therefore, be construed to the effect that the farmers in control group 2 were discriminated against to some extent. From forest products, however, the farmers in control group 2 had an income advantage (at least in 1929) which was not shared by the other groups, and this advantage should cancel, at least in part, the disadvantage of slightly less available crop land. Moreover, these farmers had more available woodland pasture than any of the other groups. A better case for discrimination could be made for control group 1 (table 11). Some adjustment might be worked out, but the discrimination seems slight, and corrections might be more confusing than helpful.

136/ See, for instance, Warren, *op. cit.*, chap. 2; Elliott, *op. cit.*, chap. V; Frank App and Allen G. Waller, *Farm Economics*, rev ed., chap. VI; Llewellyn A. Moorhouse, *The Management of the Farm*, chap. I; W. J. Spillman, *Farm Management*, chap. III; John A. Hopkins. *Elements of Farm Management*, chap. II; Jacob Hiram Arnold, *Farm Management*, chap. II; C. L Holmes. *Economics of Farm Organization and Management*, pp. 45-54.

Table 38.—*Value of forest products sold by island and control areas, by tenure groups, 1929.* [1/]

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage reporting:					
Island	19	—	—	—	13
Control group 1	18	x	—	x	12
Control group 2	92	88	87	91	90
Control group 3	14	10	x	7	9
Percentage of total value of products sold, traded, or used:					
Island	0.6	—	—	—	0.4
Control group 1	1.0	x	—	x	1.2
Control group 2	3.8	3.3	3.1	4.3	3.7
Control group 3	4.4	1.9	x	2.3	2.5
Amount reported	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Average:					
Island	74	—	—	—	74
Control group 1	104	x	—	x	98
Control group 2	49	34	25	32	36
Control group 3	267	166	x	220	223
Median:					
Island	25	—	—	—	—
Control group 1	80	x	—	x	—
Control group 2	30	30	24	30	—
Control group 3	212	14	x	250	—

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

Value of Products Produced and Consumed

The data presented in table 39, on value of products produced and consumed on the farm in 1929, are perhaps the least defensible of the value-of-products data from the standpoint of soundness or correctness. The fault lies neither with the farmers, who are supposed to supply the data, nor with the enumerator, who apparently usually has to determine the value set down. Few farmers have a record, actual or mental, of the many varied things produced and consumed on the farm. Moreover, what composite value should be placed on these items? Enumerators usually seem to evolve a set of figures that come into play when this question is reached, and more or less standard values are set down.

But the figures given in table 39 do have some relative value. Owners and part-owners, with their larger farms, and more hired help, more cows and chickens, do produce more products (in value) that are consumed on the farm than do tenants. The table is also probably correct in showing that for the control groups the value of products produced and consumed on the farm represents a much higher percentage of the total value of commodities produced than is true for the German-Swiss. As total income increases, these values naturally become relatively less significant.

Table 39.--*Value of commodities* [1/] *produced and consumed on the farm in 1929.* [2/]

Farm group	Full owners	Part-owners	Crop-pers	Other tenants	All tenure groups
	Percent	*Percent*	*Percent*	*Percent*	*Percent*
Percentage reporting:					
Island	100	100	100	100	100
Control group 1	100	100	73	95	94
Control group 2	100	100	100	100	100
Control group 3	100	100	89	96	97
Percentage of total value of products sold, traded, or used:					
Island	15	11	16	20	15
Control group 1	25	25	22	33	26
Control group 2	30	37	37	38	34
Control group 3	28	27	34	26	29
Amount reported	*Dollars*	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Average:					
Island	367	600	250	280	370
Control group 1	327	317	198	309	313
Control group 2	353	344	252	254	297
Control group 3	245	239	308	194	225
Median:					
Island	350	500	300	300	---
Control group 1	300	300	178	300	---
Control group 2	350	314	240	240	---
Control group 3	230	234	175	156	---

1/ Includes meat, milk, poultry, eggs, honey, vegetables, fruits, firewood, etc.

2/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

All Products Sold, Traded, or Consumed, 1929

In the census of 1930, the farmers in Tennessee reported an average value of $945 for products sold, traded, or consumed in 1929. For Franklin County as a whole, the farmers reported an average value of $898 for these products. Table 40 shows these values for the island and the control groups but the figures for the island and control groups are not entirely comparable with those for the State and county. This report deals with a selected number of schedules, and whereas the selection did not discriminate between the groups studied, it did discriminate against part-time farmers and incidental farmers. In general it may be repeated that many low-farm-income schedules were laid aside (for all groups), and that the figures presented in table 40 represent the income of the higher-income farmers.

Table 40.--*Average value of all products sold, traded, or consumed in the island and control areas, by tenure groups, 1929.* 1/

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Island	2,424	5,438	1,611	1,366	2,535
Control group 1	1,333	1,248	670	894	1,143
Control group 2	1,174	919	685	678	876
Control group 3	867	885	539	707	756

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

The average gross incomes for control groups 2 and 3 fall below the average income for the county. It must be pointed out that next to district 5 (containing the island and control group 1) the most highly diversified program of farming is found in the center of the county -- the area lying largely around Winchester, Cowan, and Decherd (fig. 3). In this section the same general type of farming prevails as in control group 1, and here, no doubt, the income would exceed the average for the county as does that for control group 1.

Comparative data on returns per acre of farm land or cropland may be used to measure, in a general way, the efficiency of farming practices. Table 41 presents such data for the island and the control groups. The German-Swiss realized from about 20 to 42 percent more gross returns per acre of cropland harvested than the control groups, and from 33-1/3 to 40 percent more per acre of total farm land.

Ordinarily it is assumed that cotton brings greater returns per acre of cropland than do corn or small grains. In the groups studied, most of the cotton is produced by control groups 2 and 3, which did not realize the greatest returns per acre of cropland or per acre of total farm land. Yields of small grains, particularly wheat, were not notable (table 26). The question, therefore, arises, Why or how do the German-Swiss realize greater returns per acre than the other groups, particularly the cotton farmers? A multiple answer must be made. The higher yields on their farms have already been pointed out. Moreover, a number of them bought livestock to fatten, and

figures on gross income fail to show how much of this income was not income at all. The feeding of stock was limited and was chiefly confined to the owners and part-owners. The exaggeration in income that results from it, however, applies more to the island than to the control groups.

Table 41.—*Value of products sold, traded, or used per acre of farm land and per acre of cropland, 1929.* 1/

Farm group	Full-owners	Part-owners	Croppers	Other tenants	All tenure groups
	Dollars	*Dollars*	*Dollars*	*Dollars*	*Dollars*
Per acre of farm land:					
Island	13.00	25.40	20.07	15.25	15.00
Control group 1	9.80	12.76	13.50	8.34	10.00
Control group 2	9.40	8.46	14.60	8.10	9.80
Control group 3	7.00	8.76	12.20	9.90	9.00
Per acre of cropland:					
Island	28.90	43.90	30.00	24.60	31.50
Control group 1	25.00	22.80	16.75	19.64	23.00
Control group 2	27.40	24.10	26.50	21.30	25.50
Control group 3	19.00	18.90	17.20	18.60	18.50

1/ Computed from agricultural schedules, Census of 1930, Bureau of the Census.

Another important item in accounting for the higher proportionate income of the German-Swiss is the fact that they employ more year-round crop-growing programs whereas cotton and corn fields in the control areas, particularly in areas 2 and 3, are usually idle during the winter. The milking activities of the German-Swiss also tend to increase their returns per acre. All told, there remains little doubt about the greater per acre income of the German-Swiss, even with minor allowances for exaggeration, as suggested above.

Summary and Conclusions

The agricultural practices of the German-Swiss and of the control groups in Franklin County sustain the belief that cultural backgrounds are extremely significant in farming enterprises. For all practical purposes, the physical environment in which these various groups live is the same. This is particularly true of such critical factors as soil and the nature and type of relief forms.

In general, by following practices that build up and maintain soil fertility the German-Swiss have shown themselves to be constructive farmers. Moreover, they have realized more adequately than the control groups the potentialities of the soil in a self-sustaining as well as in a commercial type of farming. The traditional farmers still demonstrate the frontier characteristic of exploiting the land by inadequate rotation and an inadequate

use of cover crops and legumes. Native fertility has been exploited by a monotonous use of crops; native grasses have been exploited by livestock. The fertile soil and the native grasses have mostly vanished. A constructive program of building up the fertility of the soil and of planting grasses and legumes is long overdue. Transition from a predatory and parasitic form of agriculture to a constructive program of farming has been made only partially.

The German-Swiss have demonstrated that a highly diversified form of agriculture is possible and relatively profitable on the red limestone soils of the near-South. This demonstration does not necessarily prove that a similar program of farming is possible and profitable in all parts of the South. Soil potentialities are exceedingly varied in this part of the country, and the red limestone soils are among the better soils of the South. For instance, the farmers in Franklin County can raise alfalfa and bluegrass, if they use reasonably good farming practices. In general, the soils of the Coastal Plain and the Piedmont are not suitable for these crops, but other legumes and grasses can and should be grown more generally. The significant consideration is the fact that the South is by no means an undifferentiated region with uniform potentialities. What uniformity exists is largely cultural in nature and not physical.

Cotton is the only crop grown in the county in the production of which climate, or the length of the growing season, is a critical factor. It follows that the diversified farming program of the German-Swiss could well be extended southward on comparable soils, but that cotton growing could not be extended much farther northward. This situation suggests that the farming program of the German-Swiss might well be compared -- or contrasted -- with the farming program prevailing in the red limestone lands in northern Alabama, where cotton production has a much more prominent part than it does in the island or control groups here reported on. It seems that it would be worth while, for instance, to select a number of control groups in cotton-growing sections of northern Alabama -- on comparable soils -- and to compare the farming practices and conditions of these farmers as carefully with the farming program of the German-Swiss as was done with the control groups in Franklin County. It would be interesting to know, for instance, how a greater emphasis on cotton production affects the per acre income or the income per family. Comparisons of farm improvements, value per acre of farm land, and units of stock reported would also be of interest.

The farm units operated by the German-Swiss in Franklin County are larger than the units that prevail in the control groups and larger than those that prevail in the South generally. Operating units are generally very small in this part of the country. This small size suggests a problem in density of population. To this problem, the findings on the German Swiss may appear to be largely irrelevant, since an increase in the size of operating units in the South generally seems impracticable in light of population density. The serious problem of rural population density lends itself more readily to speculation than to actual control. More important than the size of units is the efficiency with which present units are operated. The study on which this report is based certainly suggests that the farms in the control groups are not operated as efficiently as they might be and that the point of diminishing returns has not been reached in their operation.

Questions might be raised about prices and markets for food and feed crops that could be grown more extensively in the South. Problems of prices and markets arise when there is a surplus for sale, and not when the producers sorely need the things that they could well produce themselves.

This report is concerned primarily with a comparative study of cultural groups and farming methods, without going into the widespread agricultural dilemma. Farmers in the control groups in general follow a farming program that is common on the edges of the Cotton Belt. The German-Swiss, on the other hand, follow more nearly a middle-western or northern pattern of farming. Continued low prices for agricultural products have given rise to serious problems both in the island and in the control groups. The nature of the problems, however, confirms the distinction that was made between northern and southern agriculture, as expressed or followed by the island and control groups.

The German-Swiss are distressed by low prices, low average income, and inability to pay interest on borrowed capital. Their average income per farm is not below the average income in the North and Middle West. Their soil is built up, and they certainly diversify more than do most farmers in this country.

In the control groups, on the other hand, the problems that have been accentuated by the depression (many antedate the depression) relate to a disproportionately low income per farm, small operating units, inadequate farming machinery, insufficient livestock, lack of rotation, soil erosion, poor housing, and an inadequate diet.

In other words, for the German-Swiss the depression has created a serious agricultural problem; for the control groups it has merely accentuated many problems that are generations old.

Other cultural-agricultural islands in the South sustain the findings of this study. In each island a somewhat different farming program is followed. Most of these islands, found in an extended survey trip in the summer of 1937, are scattered from the Atlantic Coastal Plain to the Black Belt of Texas. Statistical data similar to those presented for the German-Swiss in Franklin County were gathered for two such islands, located in Cullman County, Alabama, and Warren County, North Carolina, and studies have been projected for other islands and control groups, both in the North and in the South. Some of these islands developed before the Civil War and some date back to colonial years. The time factor has not fully erased cultural factors, in all instances, as expressed in farming activities. Eventually such individual studies may serve as the basis of a rather comprehensive consideration of cultural factors as expressed in farming enterprises.

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